

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

STATE OF LOUISIANA

DIVISION OF ADMINISTRATIVE LAW

DEPARTMENT OF NATURAL
RESOURCES

NO. 2022-6003-DNR-OOC

IN THE MATTER OF

HENNING MANAGEMENT, LLC
V. CHEVRON U.S.A., INC.

PUBLIC HEARING
BEFORE THE HONORABLE CHARLES PERRAULT

Taken on Friday, February 10, 2023
DAY 5
(pages 1025 through 1385)

Held at the DIVISION OF ADMINISTRATIVE LAW
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EXHIBITS OFFERED, FILED AND INTRODUCED:

PLAINTIFFS' EXHIBITS:

1	EXHIBIT LL	'96 Prevalence of Pica	1176
2		paper	
3	EXHIBIT MM	1973 Prevention of Pica,	1176
4		the Major cause of Led	
5		Poisoning in Children	
6		paper	
7	EXHIBIT PP	1993 Soil Pica, Not a	1176
8		Rare Event paper	
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10		Guidance User Guide	
11	EXHIBIT UU	2000 Pica Commonly Missed	1176
12		paper	
13	EXHIBIT XX	Update on pica prevalence	1176
14		contributing causes and	
15		treatment	
16	EXHIBIT EEE	2017 U.S. EPA update for	1176
17		Chapter 5 of the Exposure	
18		Factors Handbook	
19	EXHIBIT FFF	2018 ATSDR Exposures Dose	1176
20		Guidance for Soil and	
21		Sediment Ingestion	
22	EXHIBIT BBBB	RECAP 2003	1176
23	EXHIBIT EEEE	Pica, a Survey of	1176
24		Historical Literature as	
25		well as reports from the	
		Field of Veterinary	
		Medicine Anthropology,	
		the Present Study of Pica	
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		discussion of its	
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	EXHIBIT WWWW	25 slides in globo	1181

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EXHIBIT XXXX Slide show presented with 1304
Mr. Sills' testimony

EXHIBIT YYYY Phase 1 Choupique 1378
property

DEFENSE EXHIBITS:

EXHIBIT 7 Chevron's limited 1378
admission

EXHIBIT 19 Phase 1 environmental 1377

EXHIBIT 127 Maxim Well Services 1378
report

EXHIBIT 158.3 LSU Ag Center, Louisiana 1302
Summary: Agriculture and
Natural Resources, 2019

EXHIBIT 158.5 12 slides from Chevron 1180

* * *

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14 STEPHEN OLIVIER

15 JESSICA LITTLETON

16 GAVIN BROUSSARD

17 CHRISTOPHER DELMAR

18

19

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1 (PROCEEDINGS COMMENCING AT 9:10 A.M.)

2 JUDGE PERRAULT: We're back on the record.
3 This is our fifth day of the hearing.
4 Today's date is February 10th, 2023. It's
5 now 9:10. I'm Charles Perrault,
6 administrative law judge. I am conducting a
7 hearing for the Department of Natural
8 Resources in Baton Rouge, Louisiana. The
9 case before us is Docket No. 2022-6003 in the
10 matter of Henning Management, LLC, versus
11 Chevron USA, Incorporated.

12 All parties are present. I'd like them
13 to make their appearance on the record.
14 We'll start with Chevron.

15 MS. RENFROE: Good morning, Your Honor, and
16 members of the panel. Tracie Renfroe for
17 Chevron U.S.A., Inc.

18 MR. BRYANT: Good morning, everyone.

19 Mitchell Bryant for Chevron U.S.A.

20 MR. CARTER: Johnny Carter for Chevron U.S.A.

21 MR. GREGOIRE: Victor Gregoire for Chevron
22 U.S.A. Good morning.

23 JUDGE PERRAULT: All right. And for Henning?

24 MR. WIMBERLEY: Good morning, Your Honor.

25 Todd Wimberley, Henning.

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1 MR. CARMOUCHE: John Carmouche on behalf of
2 Henning.

3 JUDGE PERRAULT: And we'll have the panels
4 make their appearance on the record.

5 PANELIST LITTLETON: Jessica Littleton,
6 Department of Natural Resources, the Office
7 of Conservation.

8 PANELIST DELMAR: Christopher Delmar,
9 Department of Natural Resources, Office of
10 Conservation.

11 PANELIST OLIVIER: Stephen Olivier,
12 Department of Natural Resources, Office of
13 Conservation.

14 PANELIST BROUSSARD: Gavin Broussard,
15 Department of Natural Resources, Office of
16 Conservation.

17 JUDGE PERRAULT: Thank you. Henning is
18 presenting its plan for remediation, and call
19 your next witness.

20 MR. WIMBERLEY: Your Honor, we call Dr. Rick
21 Schuhmann.

22 JUDGE PERRAULT: All right. How are you
23 doing? Please state your name for the
24 record.

25 THE WITNESS: Richard John Schumann.

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1 JUDGE PERRAULT: Would you spell your last
2 name?

3 THE WITNESS: I sure will.

4 S-C-H-U-H-M-A-N-N.

5 JUDGE PERRAULT: M-A?

6 THE WITNESS: N-N. I know it's difficult.

7 JUDGE PERRAULT: M-N?

8 THE WITNESS: N-N. Two Ns, yeah. Yes.

9 JUDGE PERRAULT: Okay.

10 RICHARD JOHN SCHUHMANN,
11 having been first duly sworn, was examined and
12 testified as follows:

13 MR. WIMBERLEY: Your Honor, if I may, I have
14 copies of the presentation for the panel and
15 for yourself.

16 JUDGE PERRAULT: That will be great. Thank
17 you.

18 DIRECT EXAMINATION

19 BY MR. WIMBERLEY:

20 Q. Good morning, Dr. Schuhmann.

21 A. Good morning.

22 Q. How are you this morning?

23 A. I'm well, thanks. And yourself?

24 Q. I want to let the panel know a little
25 bit about your background and why you're here

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1 today.

2 MR. WIMBERLEY: Go to the next slide, Scott.

3 BY MR. WIMBERLEY:

4 Q. You have a background in geology from
5 the University of New Hampshire; correct?

6 A. That's correct.

7 Q. And you got an environmental engineering
8 degree from the University of Houston?

9 A. Yes.

10 Q. And a Ph.D. from Penn State University?

11 A. Yes. In environmental engineering.

12 Q. What was your dissertation on?

13 A. I studied the mass transport of gases
14 through an unsaturated porous medium. So it
15 looked at the way gases move through dirt.

16 Q. And what did you learn from that?

17 A. I learned that everything leaks. Some
18 things just leak faster than others. That's sort
19 of the big picture. I learned more than that, but
20 that was sort of the big takeaway for me.

21 Q. You spent some time at MIT also; right?

22 A. I did. I spent time teaching at MIT --

23 Q. What were you doing?

24 A. -- and supervising research.

25 I was housed in what they call Course 2

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1 at MIT, which is the department of civil and
2 environmental engineering, and I taught project
3 management there. I created a new project
4 management curriculum for the institute, and I
5 supervised graduate research in surface water
6 hydrology. So I had a research team, and we had a
7 project for the Red Cross in Uganda. So we spent
8 two years modeling the western flank of
9 Mount Elgon with HEC-HMS and HEC-RAS as part of a
10 flood warning system.

11 Q. And you've also been doing consulting
12 while you were teaching full-time for about
13 30 years?

14 A. Yes.

15 Q. Why have you done the consulting on the
16 side?

17 A. I started when I was a poor graduate
18 student at the University of Houston because I
19 needed a job, and I found I really enjoyed it.
20 You know, it was like solving a big engineering
21 problem, and so the opportunities kept arising.
22 And as I began teaching, I recalled when I was a
23 university student that I really appreciated it
24 when my professors would come into the classroom
25 with real world examples of problems and solutions

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1 as opposed to just reciting from the textbook.

2 So for me consulting was an excellent
3 way to stay in touch with the real world, I guess,
4 while teaching within the halls of academia.

5 Q. And you've been in court many times
6 before. So you've been qualified as an expert in
7 risk assessment?

8 A. Yes. I wouldn't say many times, but
9 I've been qualified as an expert in risk
10 assessment here in the state of Louisiana and in
11 the federal court.

12 Q. And contaminant fate and transport?

13 A. Yes. Here in Louisiana and in Texas.

14 MR. WIMBERLEY: Your Honor, at this time I
15 would move to have Mr. Schuhmann qualified as
16 an expert in risk assessment, including the
17 RECAP methodologies and environmental fate
18 and transport.

19 JUDGE PERRAULT: Any cross?

20 MS. RENFROE: Yes, Your Honor.

21 JUDGE PERRAULT: Please proceed.

22 VOIR DIRE EXAMINATION

23 BY MS. RENFROE:

24 Q. Good morning, Dr. Schuhmann.

25 A. Good morning, Mrs. Renfroe.

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1 Q. Am I pronouncing your name correctly?

2 A. Yes. It's the way it should be
3 pronounced, but I'll take it any way I can get it,
4 quite frankly.

5 Q. I'm going to do my best to say --

6 A. Schuhmann, Schuhmann (different
7 pronunciation). It's okay with me.

8 Q. I'm going to do my best to pronounce it
9 correctly.

10 So welcome to Louisiana from your home
11 of Kennebunkport, Maine.

12 A. Welcome back, yes.

13 Q. Welcome back.

14 A. This is my old hometown.

15 Q. So a few questions about your
16 qualifications. First, sir, you're not a
17 toxicologist, are you?

18 A. I am not a toxicologist.

19 Q. You're not an ecotoxicologist, are you?

20 A. No.

21 Q. You're not a hydrogeologist, are you,
22 sir?

23 A. I certainly practice in that area of
24 hydrogeology, and hydrogeology is the driving
25 force for fate and transport. So -- but I would

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1 have to say that it's -- number one, you're asking
2 me for a legal opinion whether I'm an expert or
3 not, but I would say that I would be able to
4 assist the trier of fact and the panel in areas of
5 hydrogeology.

6 Q. No court has recognized you as an expert
7 in hydrogeology, have they, sir?

8 A. Again, hydrogeology is a component of
9 fate and transport, but if you're transporting
10 something through saturated porous media, that's
11 hydrogeology.

12 Q. Which court, sir, has recognized you as
13 an expert in hydrogeology?

14 A. A court has recognized me as an expert
15 in fate and transport of contaminants. So I'm
16 just -- I don't know how else to say it. I'm not
17 trying to be difficult.

18 Q. Well, I'm sure you're not.

19 A. Yeah.

20 Q. Have you been certified or licensed by
21 any state in the country as a hydrogeologist?

22 A. No.

23 Q. And you've not been certified as a human
24 health risk assessor, have you, sir?

25 A. No.

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1 Q. In this case you did not perform a
2 traditional human health risk assessment; correct?

3 A. I disagree with that. I did perform a
4 traditional human health risk assessment.

5 Q. Using RECAP?

6 A. Using RECAP, yes.

7 Q. So do you remember when I took your
8 deposition in November, sir?

9 A. Yes.

10 Q. That's when we first met; right?

11 A. Yes.

12 Q. And I asked you a question. You did not
13 perform --

14 A. Oh. Sorry. Sorry to have the epiphany
15 and say "oh."

16 Yes.

17 Q. So for the record --

18 A. Please.

19 Q. Sorry. Let's not step on each other.

20 I asked you the question: You did not
21 perform a traditional human health risk assessment
22 of the property, and your answer was no.

23 A. May I answer now?

24 Q. Are you changing your testimony, sir?

25 A. No. I'm still -- I'm sticking with my

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1 testimony from my deposition. Because it's the
2 difference between the word "assessment" and
3 "evaluation," and that's -- for me those are the
4 two critical verbs.

5 Q. What you did in this case was to perform
6 an evaluation under RECAP --

7 A. Yes.

8 Q. -- right?

9 A. That's correct.

10 Q. Before this case you have never prepared
11 a RECAP evaluation for submission to the Louisiana
12 Department of Natural Resources; correct?

13 A. That's correct.

14 Q. In fact, you'd never prepared any type
15 of human health risk assessment for submission to
16 any Louisiana agency before this case?

17 A. Not for submission to any agency, no.

18 Q. Now, likewise, sir, you have never
19 participated in an Act 312 hearing on a most
20 feasible plan before today?

21 A. I have not.

22 Q. And you've never provided any testimony
23 on any topic to any Louisiana agency, including
24 the DNR, before today; correct?

25 A. That's correct.

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1 Q. Including on the issues that
2 Mr. Wimberley is now proffering you on; correct?

3 A. That's correct.

4 Q. You've never once reviewed any of the
5 most feasible plans issued by DNR to understand
6 how DNR applies RECAP, have you, sir?

7 A. That wasn't my role here. So I didn't
8 do that.

9 Q. Well, you're being tendered now as an
10 expert on RECAP as I understand from
11 Mr. Wimberley, and I'm trying to understand what
12 qualifications you have on that.

13 You're not familiar with how DNR has
14 interpreted RECAP based on the previous most
15 feasible plans that it has issued, are you, sir?

16 A. No, I'm not.

17 Q. And you're not holding yourself out as
18 an expert in 29-B, are you?

19 A. No. I'm familiar with 29-B, but I'm not
20 holding myself out as an expert in it.

21 Q. You didn't perform an evaluation under
22 29-B in this case, did you, sir?

23 A. No.

24 Q. And your report does not contain any
25 opinions about ICON's most feasible plan, does it?

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1 A. No, it does not.

2 Q. All right, sir.

3 MS. RENFROE: Your Honor, based on those
4 grounds, I would object to Mr. --
5 Dr. Schuhmann being tendered as an expert on
6 RECAP.

7 JUDGE PERRAULT: On RECAP?

8 MS. RENFROE: And as well as on the issue of
9 contaminant fate and transport.

10 JUDGE PERRAULT: All right. What about risk
11 assessment?

12 MS. RENFROE: I don't object to that for the
13 limited purpose of this hearing.

14 JUDGE PERRAULT: Okay. All right.

15 MR. WIMBERLEY: Your Honor, I offered him as
16 an expert in risk assessment, including the
17 methodologies -- the health risk assessment
18 methodologies under RECAP. Mr. Schuhmann has
19 done health risk assessments under all kind
20 of regulatory frameworks all over the country
21 and all over the world for 30 years.

22 MS. RENFROE: But not in Louisiana, sir.

23 MR. WIMBERLEY: There's a first time for
24 everything.

25 JUDGE PERRAULT: Yeah, there is a first time.

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1 THE WITNESS: I testified in one trial.

2 JUDGE PERRAULT: I'll allow him in based on
3 his experience, and counsel has outlined --
4 you know, I don't want to call it
5 shortcomings but the limits of his experience
6 in this field. So you'll take that under
7 consideration when you consider his
8 testimony. Okay? So we'll let him in as the
9 health risk assessment expert and contaminant
10 fate and transport.

11 MS. RENFROE: Your Honor, one more
12 clarification. I want to make sure that
13 Mr. Wimberley is not offering him on any
14 issues regarding engineering within the
15 contaminant fate and transport scope.

16 MR. WIMBERLEY: Engineering is a very broad
17 term. What do you mean by that?

18 MS. RENFROE: Well, are you offering him on
19 any issue regarding engineering, and if you
20 are, I'd like to take him -- again, I'd like
21 to ask some questions.

22 MR. WIMBERLEY: I mean, he's a Ph.D.
23 engineer, and engineering is anything dealing
24 with physics.

25 MS. RENFROE: Let me address my --

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1 MR. WIMBERLEY: Sorry, Your Honor.

2 MS. RENFROE: May I --

3 JUDGE PERRAULT: That's okay. Yes. Please
4 go ahead.

5 VOIR DIRE EXAMINATION

6 BY MS. RENFROE:

7 Q. Again, Dr. Schuhmann, you are not a
8 licensed engineer in the state of Louisiana, are
9 you?

10 A. No, I'm not.

11 Q. Thank you.

12 MS. RENFROE: So on that basis, I will object
13 to any opinions being elicited from
14 Dr. Schuhmann on engineering.

15 JUDGE PERRAULT: Okay.

16 MR. WIMBERLEY: I don't think we have any,
17 Your Honor.

18 JUDGE PERRAULT: That's good, then. We're
19 not going to have a problem.

20 All right. Proceed.

21 DIRECT EXAMINATION

22 BY MR. WIMBERLEY:

23 Q. Dr. Schuhmann, you were asked in this
24 case to look at Ms. Levert's ERM RECAP risk
25 assessment and tell if there were any problems

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1 with it; right?

2 A. Basically, yes.

3 Q. And you referred to your type of
4 analysis that you did in this case as a health
5 risk scoping analysis?

6 A. Yes. A high-level look at a situation.

7 Q. You didn't attempt to do a full-blown
8 DEQ RECAP full analysis that you're going to
9 submit to DEQ with all the forms that go with it.
10 You were looking at it on a scoping basis to see
11 if Ms. Levert missed anything?

12 A. Yes, that's correct.

13 Q. And what did you find?

14 A. I found there were two fundamental
15 differences.

16 Q. Next slide?

17 A. Yeah. Two fundament differences between
18 our approaches. Number one had to do with the
19 Summers dilution factor, and it was in the way
20 that Ms. Levert conducted the screening option
21 SPLP analysis. So by using the default Summers
22 dilution factor of 20, and I just simply disagreed
23 with that. And we'll get into it a bit later.

24 The second is that because of the nature
25 of this site -- 1200 acre site -- it's upland.

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1 It's in the proximity to Hayes, Louisiana. It's
2 near the coast. It's the -- the owner has
3 expressed his feelings that it's a possibility
4 that this land might be used for a residential
5 subdivision. If it was, it could accommodate
6 quite a few homes, and there are approximately 1.6
7 children per family in the state of Louisiana. So
8 those homes would have a significant number of
9 children in them. So from my perspective because
10 of the potential for a large number of children to
11 be living on this site, I included a pica
12 analysis, and we'll get into that as well.

13 Q. And those are the two main things that
14 you're here to tell us about -- testify to today?

15 A. Yeah, that's it. I think in many ways
16 my scoping analysis paralleled Ms. Levert's.
17 RECAP is a fairly robust and structured framework.
18 It's got guardrails on it, but the assessor is
19 allowed to make some judgment calls. And then
20 again, we just -- Ms. Levert and I will have
21 professional differences on the Summers dilution
22 factor.

23 Q. And you heard Mr. Miller's testimony and
24 his criticisms of the way that ERM and Ms. Levert
25 and Mr. Angle classified groundwater, and you

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1 agreed with him on those?

2 A. I agree with Mr. Miller, yes.

3 Q. And you agree that -- you heard
4 Mr. Miller's testimony about the problems with
5 using SPLP analysis with chlorides because of its
6 solubility, and you agree with him on that?

7 A. I do. And Mr. Miller and I met and
8 spoke about that back in -- I think in August, and
9 with respect to chlorides, the SPLP is
10 problematic. With respect to barium and to other
11 compounds because of the KD values, the SPLP is
12 actually -- is of value. The KD values are off by
13 three orders of magnitude. So the SPLP is -- can
14 be quite representative of the leaching from the
15 soil for barium.

16 Q. Okay.

17 MR. WIMBERLEY: Next slide.

18 BY MR. WIMBERLEY:

19 Q. Let's talk about Ms. Levert's soil to
20 groundwater evaluation of barium. She used a
21 leachate analysis; right? SPLP?

22 A. That's correct.

23 Q. And that's okay under RECAP?

24 A. It is. You have the option of either
25 using Table 1, which is a look-up table, or

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1 collecting soil samples from some of the most
2 contaminated areas within each AOI, running an
3 SPLP, and comparing the leachate to the screening
4 SSGW, the groundwater RECAP standard.

5 Q. And unlike chlorides where there's a
6 problem with SPLP, it works for barium by and
7 large?

8 A. Yes. Yes. And I've done some plots,
9 and I've plotted the -- I've actually plotted
10 the -- you know, the field method versus 29-B
11 versus the RECAP to see the relative differences
12 in the outcomes because each one of those is
13 performed a bit differently, and you see -- you
14 actually see differences between the three methods
15 when you're down at the lower end of the KD value,
16 down around .1 where chlorides are. But as you
17 move up the KD value on the X axis, all of those
18 graphs sort of converge and you lose that
19 difference between the methods.

20 Q. Okay. And so your main problem with her
21 leachate analysis, I understand, is that she used
22 a Summer dilution factor of 20, and you feel
23 that's inappropriate?

24 A. Yes.

25 Q. That's inappropriate under RECAP?

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1 A. Yes.

2 MR. WIMBERLEY: Next slide.

3 BY MR. WIMBERLEY:

4 Q. And so let's look at what RECAP has to
5 say about leachate standard and how you calculate
6 the dilution factor that you used.

7 This was something that, when you first
8 looked at RECAP, it didn't make sense to you;
9 right?

10 A. Correct. It just didn't -- it didn't
11 make physical sense because it's pretty clear. It
12 says use a Summers dilution factor of 20, and I
13 couldn't understand why they were forcing the
14 evaluator to do that, especially in any context,
15 with any AOI size at all.

16 Q. It makes sense for a small AOI?

17 A. Yes, it would make sense for a small
18 AOI.

19 Q. And you learned that RECAP 101 -- after
20 you dug a little further, it says exactly what you
21 thought it should say?

22 A. It does. So it was after my deposition,
23 and I think I said something untoward towards
24 RECAP. I said RECAP is not a contract with
25 stupidity, that if there's something that appears

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1 physically wrong in RECAP, it doesn't mean that we
2 should blindly go and just do it without
3 questioning it. And so I think I owe RECAP an
4 apology. This is hanging -- this slide here is
5 hanging on a slide presentation that's on LDEQ's
6 web page. If you go to LDEQ's web page for RECAP,
7 there's a slide presentation called RECAP 101, and
8 I see the date -- I looked at the date that the
9 file was created, and it was created in -- at
10 least the one hanging on the web, it was created
11 in 2018. So that may be when they put it up
12 there.

13 But these things, I believe, are used to
14 educate practitioners, and here -- what I read
15 here in RECAP 101 makes sense to me, and that is
16 if the aerial extent of the soil impact -- and
17 this is part of identification of the AOI -- is
18 greater than half an acre, then under the
19 screening option, you must calculate site-specific
20 screening standards.

21 So that then, from my reading of that,
22 means that instead of using the default dilution
23 factor of 20, you would calculate a site-specific
24 dilution factor.

25 Q. And, in fact, your reading of that is

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1 consistent with the way they treat it in RECAP
2 2016 and 2019 and the EPA, all agree that for an
3 AOI above a half an acre, you should use a
4 site-specific screening standard?

5 A. That's correct. The subsequent RECAP
6 versions -- they've clarified this, and the EPA is
7 quite clear about it so that there's no ambiguity
8 when it comes to soil screening in the EPA
9 publications.

10 Q. And you weren't surprised to find those
11 corrections in RECAP 101 because it makes
12 scientific sense; right?

13 A. No. I was happy to see it. And you're
14 right. It makes scientific sense from a first
15 principle's perspective. When I saw that, I
16 just -- I couldn't understand it.

17 Q. Let's move on to what the EPA has to say
18 about using a default dilution factor under -- on
19 a site that's bigger than a half an acre -- on an
20 impact area that's bigger than a half an acre AOI.

21 A. All right.

22 MR. WIMBERLEY: Move to the next slide,
23 Scott.

24 BY MR. WIMBERLEY:

25 Q. You also looked at the EPA guidance --

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1 this is the soil screening guidance user guide,
2 and actually you can see right here -- it's
3 actually one of the references that's used in
4 RECAP; correct?

5 A. That's correct. In RECAP 2003.

6 Q. And what does it have to say about using
7 a Summers dilution factor on a site that's bigger
8 than half an acre -- an AOI bigger than half an
9 acre?

10 A. Well, I think that this is where
11 DEQ's -- the RECAP dilution factor comes from, is
12 from this assessment. EPA says: "The default DAF
13 of 20 has been selected as protective for
14 contaminated soil sources up to .5 acres in size.
15 The DAF of 20 may be protective of larger sources
16 as well." That's true. It could be. "However,
17 this hypothesis should be evaluated on a
18 site-specific basis. Since migration to
19 groundwater SSLs are most sensitive to the DAF,
20 site-specific dilution factors should be
21 calculated." And I totally agree with this.

22 MR. WIMBERLEY: Would you move forward to the
23 next slide, Scott?

24 BY MR. WIMBERLEY:

25 Q. And Ms. Levert and ERM did not use a

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1 site-specific dilution factor; right?

2 A. That's correct.

3 Q. You've heard Ms. Levert talk over and
4 over about how site-specific data is better than
5 default data?

6 A. And she's correct in general unless
7 you've got bad data, and then -- well -- but, yes,
8 site-specific data -- it's better than some
9 theoretical default.

10 Q. The general principle on how risk
11 assessment is site-specific data is better?

12 A. That's correct.

13 Q. So she didn't use site-specific. She
14 used what?

15 A. She used the default dilution factor of
16 20, and it's a 20-fold dilution of the water
17 percolating through the soil.

18 Q. And how do you know that from looking at
19 her table?

20 A. If you look at the soil SSGW, that's the
21 RECAP standard down at the bottom there, the 40.
22 It's 40 milligrams per liter, and so that was
23 derived by multiplying the GW-1, which is
24 2 milligrams per liter, by the Summers dilution
25 factor of 20, the 20-fold dilution, and you wind

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1 up with the RECAP standard, then, of 40 milligrams
2 per liter.

3 Q. And that's how Ms. Levert explained it
4 in her testimony?

5 A. I believe so.

6 Q. And so if you use a screening standard
7 of 40 based on this default DAF of 20, this factor
8 of 20, what do you see -- do you see any
9 exceedances in the -- her analysis?

10 A. No. You don't see any exceedances of
11 that 40 milligrams per liter in the SPLP result.

12 Q. Explain to us a little bit about what a
13 dilution factor is and kind of what we're trying
14 to measure here. Why is this important?

15 A. Okay. And the Summers equation appears
16 up there on that slide.

17 Q. And that equation is from RECAP; right?

18 A. That equation is from RECAP, correct.
19 And you'll see -- so let's start there. It's the
20 ratio of the concentration of the -- let's call it
21 barium for now -- of barium percolating down
22 through the soil column. That's the CL -- the
23 ratio of the CL to the CSI. And that's the water
24 that, once it's been diluted, the percolating
25 water, diluted with aquifer water, the water

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1 that's then going to form a plume down-gradient of
2 this source.

3 So we calculate this ratio -- and,
4 again, for me, it's a simple mass balance. So
5 it's basically what goes in must come out. So our
6 inputs are infiltrating water percolating down
7 through the plane of the AOI. So it's -- think
8 about it as rainfall. So we've got a vector
9 coming down. We've got a mass coming down, and
10 then through the aquifer -- through the saturated
11 porous media, we have uncontaminated water, and
12 then think about sort of a mixing zone underneath
13 that AOI where the uncontaminated aquifer water is
14 then mixing with the infiltrating contaminated
15 water. And then just down-gradient of the AOI --
16 right at the edge of it where X equals zero --
17 let's say we were going to measure a plume
18 down-gradient of this AOI. At X equals zero,
19 that's the concentration, the CSI.

20 Yeah. The parameters in there -- "I" is
21 the infiltration rate. "SW" is the width of the
22 AOI perpendicular to flow through the groundwater.
23 "L" is the length of the AOI. So if we had a
24 square AOI, they -- those would be equal. SW
25 would be equal to L. "DV" is the Darcy

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1 groundwater velocity. So that's the hydraulic
2 conductivity multiplied by the hydraulic gradient,
3 and that's often given in units of meters per year
4 or meters per unit time. I find it's more
5 informative to give all the full units of meters
6 cubed per meters squared per year, let's say. You
7 can cancel the exponents out there, right, and
8 wind up with meters per year.

9 But that explains a little bit better
10 what's going on there. It's how many cubic meters
11 of water are passing through a plane -- a meter
12 squared plane per year. That's what the Darcy
13 velocity is. It's not really a velocity. It's
14 almost a flux of water through a plane. And then
15 finally, the SD is the thickness of the
16 groundwater plume. In this case, it's the
17 thickness of the aquifer.

18 Q. So the smaller -- if you have a given
19 aquifer, the smaller the AOI, the more water there
20 is around it to disperse it. All right. If you
21 have a really big AOI, the water that's in the
22 middle of the AOI is surrounded by water that's
23 also being contaminated by the AOI?

24 A. Yeah. The larger the AOI, the greater
25 the flux of contaminants down into the

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1 groundwater.

2 Q. And the thicker the aquifer, the higher
3 the Darcy velocity?

4 A. The greater the dilution.

5 Q. Right. I'm sorry.

6 A. Correct. Because it would be the
7 thickness of the groundwater plume. This dilution
8 factor is especially sensitive to the Darcy
9 velocity. So if you have a site with a very low
10 hydraulic gradient and a reasonably low hydraulic
11 conductivity, then you're going to wind up with a
12 low Darcy velocity and you're going to wind up
13 with very, very low dilution.

14 Q. So when you calculated the Darcy
15 velocity and the dilution factor that was
16 site-specific to this property, what parameters
17 did you use?

18 MR. WIMBERLEY: Next slide, Scott.

19 THE WITNESS: It's -- no.

20 MR. WIMBERLEY: No. Back up. Sorry.

21 A. So now this is the -- what I've done is
22 just taken values from -- number one, the
23 infiltration rate is .1, and it's -- again, it's
24 meters per year. It's sort of a bit deceiving.
25 It's meters cubed per meters squared per year of

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1 infiltration. That comes from RECAP, and that
2 is -- it tends to be a state-specific term. So if
3 we would go to the state of New Jersey, then the
4 state of New Jersey would provide us with -- the
5 DEQ there would provide us with a different
6 infiltration rate. And I'm not privy to the
7 development of those, but infiltration rates tend
8 to be based upon meteorological conditions as well
9 as a curve number or the nature of the regional
10 soils and how much runoff you get versus
11 infiltration.

12 The SW and the L again define the area
13 of the AOI. So what I've just assumed for this
14 example calculation is that we have an AOI not of
15 10 acres or 100 acres. We'd just -- let's bump it
16 up a little bit from half an acre. Let's take a
17 look at what happens when you go up to an acre.
18 So I've tried to be --

19 BY MR. WIMBERLEY:

20 Q. And you measured all the AOIs here, and
21 they're all over half an acre, or they're all over
22 an acre?

23 A. Yeah. There's one that's 18 acres.
24 Yeah. So this is just an acre. So it's 64 meters
25 by 64 meters.

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1 Q. Which would be a conservative approach?

2 A. I thought so. I -- it's just and I like
3 working with 1s. It makes the math a little bit
4 easier.

5 Q. And how did you calculate the Darcy
6 velocity?

7 A. The Darcy velocity is a product of ERM's
8 hydraulic conductivity, which they reported, and
9 their hydraulic gradient data. They reported a
10 range of values for the hydraulic gradient at the
11 site from .0003 to .003. So I tried to just drop
12 the number about halfway -- and that's
13 foot-per-foot. So I tried to drop a number about
14 halfway between triple zero three and double zero
15 three, and so I chose double zero one. It seemed
16 to make sense to me to split the difference. So
17 when you multiply .001 feet per foot by the ERM
18 hydraulic conductivity and you convert from
19 centimeters to meters and you convert seconds to
20 years, this Darcy velocity falls out of the
21 equation, which is .1 meters cubed per meter
22 squared per year.

23 And then finally, the SD was the
24 thickness of the groundwater plume, and I looked
25 at the wells that ERM had used to define the

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1 hydraulic conductivity in the thickest -- the
2 thickest strata I think I saw there for one of
3 their wells was about 10 feet and -- but most
4 of the wells were in thinner lenses than that.
5 10 feet was about the thickest, and, again, I
6 thought: To be conservative, let me make it the
7 biggest -- the thickest aquifer I can for the most
8 dilution. So I picked the greatest SD I could
9 find. And I chose 3 meters just because it's a
10 round number. 10 feet -- it's close to 10 feet.
11 It's not quite 10 feet, but it's certainly a lot
12 larger than the average.

13 Q. Okay. And so when you used --

14 MR. WIMBERLEY: The next slide, Scott.

15 BY MR. WIMBERLEY:

16 Q. Yeah. In this slide you're showing us
17 what happens when you take Ms. Levert's analysis,
18 use her data, her data even for calculating the
19 Darcy velocity, her data for the calculating the
20 concentrations of the AOIs. What you do is you
21 plug in the site-specific dilution factor into her
22 equation. That's what this shows; right?

23 A. That's correct. It changes the soil
24 SSGW. So that RECAP standard goes from
25 40 milligrams per liter down to 2.1 milligrams per

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1 liter, which is quite significant.

2 Q. So you're essentially dividing hers by
3 20 -- the 20 factor that she added in
4 inappropriately?

5 A. 1.05, yes. For me it's one. There's
6 really -- there's no dilution. The groundwater is
7 moving so slowly at that site, and I think we can
8 see -- well, if you look at the plumes, they look
9 like they're almost -- that there's diffusion
10 contributing to them.

11 Q. And by that you mean there's actually
12 some concentration that seems to be moving
13 upgradient?

14 A. Yeah. It's -- they're just
15 interesting-looking plumes. They certainly don't
16 look like plumes that are running through a Karst
17 topography or through an old paleo stream channel,
18 a gravel bed, or something like that.

19 Q. And so when you use the site-specific
20 dilution factor, we find that there are
21 exceedances in three of the AOIs?

22 A. Yes.

23 Q. And what happens under RECAP when there
24 are exceedances in this analysis?

25 A. Well, then you have a choice. You can

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1 either remediate to that level or you can move on
2 to a higher-level evaluation. So you can move on
3 to a management option evaluation.

4 Q. And that further analysis wasn't done by
5 Ms. Levert?

6 A. No.

7 Q. It wasn't done by you? Nobody did this
8 analysis?

9 A. No. Ms. Levert didn't do the analysis
10 because she stopped because she had calculated a
11 RECAP standard of 40 and, when she compared the 40
12 to the SPLP results, it informed her that she
13 could stop there.

14 Q. Do you have a feeling either way in your
15 opinion about whether -- if the analysis is
16 complete, whether we might see an actual
17 remediation be required?

18 MS. RENFROE: Your Honor, I'll object to that
19 as calling for speculation. If he's asking
20 about what the DNR is going to require -- is
21 that the question? If it is, then I object
22 on the grounds of speculation and lack of
23 qualification.

24 JUDGE PERRAULT: You can't ask what the DNR
25 is going to require.

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1 MR. WIMBERLEY: That's fine, Your Honor.

2 JUDGE PERRAULT: But you ask him his opinion.

3 BY MR. WIMBERLEY:

4 Q. So our options now for this panel under
5 RECAP would be you either stop here and you have
6 to do a remediation RECAP or you take this
7 further. Somebody has got to do that analysis.
8 You've got to do further evaluation?

9 A. Correct.

10 Q. You can't rule out remediation at this
11 point?

12 A. No, I don't think so. I think -- and I
13 can't speak for DEQ, but I think that would be the
14 position.

15 Q. And you also found a problem --

16 MR. WIMBERLEY: Next slide, Scott.

17 BY MR. WIMBERLEY:

18 Q. -- with the way Ms. Levert conducted her
19 soil to direct contact analysis; right?

20 A. Well, I wouldn't necessarily call it a
21 problem. I would call this last topic on the
22 dilution factor a problem. I would call this a
23 difference of opinion in forming the conceptual
24 model for the risk evaluation. The assessors look
25 at situations, and it's not uncommon for two

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1 assessors to look at the same situation and
2 approach it from different angles.

3 Q. Okay. But nonetheless, you found that
4 pica behavior should have been considered in the
5 risk analysis?

6 A. That's my opinion.

7 Q. And it wasn't by Ms. Levert?

8 A. No, it wasn't.

9 Q. Let's talk a little bit about pica, and
10 I understand, just like everything, you know,
11 there's a spectrum of behavior.

12 Can you tell us a little bit about, you
13 know, what is pica?

14 A. Well, yeah. And I think the term you
15 used is good: A "spectrum." In a large end
16 world, things tend to be normally distributed. So
17 we get a Gaussian distribution of things, and when
18 it comes to soil ingestion -- you know, a couple
19 of standard deviations from the mean. You capture
20 the bulk of the population; however, there are
21 tails. We recognize that. So there are some
22 individuals that are consuming less soil and dust
23 than the average, and there are some that are
24 consuming more.

25 And when we talk about this consumption,

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1 it's -- most of it -- when we talk about
2 average -- the soil ingestion pathway, it's not
3 people going outside and eating dirt from their
4 garden or something. There's something called
5 geophagy where people actually cook with clays and
6 things like that and they eat quite a bit of
7 mineral material. But I'm -- that's not part of
8 my evaluation.

9 But the majority of the soil, at least
10 within RECAP, that's ingested is comprised of
11 dust, and that's either household dust -- so it's
12 a dirt that's been tracked indoors -- that's
13 55 percent of that pathway -- or it's outdoor soil
14 dust on the top of the soil column and then a
15 component of actual soil from the top couple of
16 inches. So when you think about this pathway,
17 it's primarily a dust-like pathway.

18 MR. WIMBERLEY: Okay. The next slide, Scott.

19 BY MR. WIMBERLEY:

20 Q. Let's talk about how common pica is.
21 What's our incidence here?

22 A. Well, yeah. It was interesting. I was
23 in the hearing room the other day when Dr. Kind
24 was here and -- listening to his testimony, and he
25 said two things that sort of struck me. And he

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1 used this -- these words. He said pica is
2 uncommon and it's rare. And I had -- already I
3 had submitted these papers, and I had these in my
4 library for quite some time. But these are
5 peer-reviewed journal articles with titles that
6 say pica is common but commonly missed.

7 The other one is it said Soil Pica: Not
8 a rare event. So, again, I think that some of
9 this has to do with perceptions, and people that
10 haven't seen pica and haven't been -- or done
11 reading in it and aren't that aware of it might
12 think that it's uncommon or rare, but it's not.

13 MR. WIMBERLEY: The next slide, Scott.

14 BY MR. WIMBERLEY:

15 Q. What does the literature have to say
16 about how common pica is?

17 A. You know, to start off, this ATSDR quote
18 is pretty good, that within any population of
19 children, some could exhibit soil pica behavior,
20 particularly preschool kids, and if you've been
21 around young children and you see them picking up
22 things and putting them in their mouths and
23 licking the bottom of their shoes -- you know, my
24 daughter goes out in the garden, and she pulls a
25 radish out and bangs it a couple of times on her

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1 leg and eats it and probably consumes about half a
2 pica dose with one radish, because it's not that
3 large a quantity.

4 But you can see -- I just pulled some of
5 the literature. There's general agreement by the
6 scientific community that we don't know -- nobody
7 has done a metanalysis and come up with a specific
8 percentage -- that the global percentage of pica
9 is this and done a country-by-country analysis or
10 a state-by-state analysis. Those data just don't
11 exist.

12 But from my reading in the literature, I
13 put these references up here. You can see that
14 the literature -- I tried to bound it. The
15 literature goes from about 9 percent to about
16 50 percent. Most of the literature that I see
17 drops down in kind of the 10 to 20 percent area.

18 Q. And these are all peer-reviewed articles
19 that you provided to the defendants in this case?

20 A. That's correct. The one on the
21 bottom-right -- I just want to give you a heads-up
22 because a peer-review is something I respect. The
23 bottom-right is from probably a -- the lowest
24 level of peer-review of all of them, and it
25 happens to have the highest incidence of pica

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1 reported. So I would put -- I would tend to put
2 less weight on that 50 percent and more on others
3 like Calabrese or Baltrop. You know,
4 18.5 percent, 10.5 percent. Or Cooper. You know,
5 that's a book that -- the 21.9 percent. That's
6 actually a book that was written by Dr. Cooper in
7 1957 and a very interesting book on pica. If you
8 get interested in pica after this hearing, that
9 would be a good book for you to pick up.

10 Q. And so in the peer-reviewed
11 literature -- in the well-peer-reviewed
12 literature, we're seeing numbers like 21 percent?
13 18 1/2 percent? 9.4 percent? 10.5 percent?

14 A. Correct.

15 Q. Kind of the bottom is about 10 percent?

16 A. Yes.

17 Q. One in ten?

18 A. One in ten, yeah. To me that's
19 significant.

20 Q. This is a common thing. Everybody knows
21 ten kids. You're going to know a pica kid?

22 A. I would think so. I would think so.

23 Q. And at what age do these children
24 exhibit the most pica behavior?

25 A. It's generally from the ages of -- well,

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1 the age range goes all the way up -- the EPA
2 offers pica ingestion rates for all the way up to
3 12 years of age. I would say probably zero is a
4 bad place to start because infants are guarded
5 from engaging in that type of behavior. So if I
6 had to just make a general sort of categorization,
7 I would say between the ages of one and seven.

8 Q. Okay. And I'm going to show this next
9 slide. This was a surprise to me.

10 I thought, when we were talking about
11 pica, we're talking about a kid that's, you know,
12 gobbling up dirt and mouthfuls of dirt. We're
13 talking about small quantities of dirt here?

14 A. Yeah. The dose of the -- the dose I
15 used was -- well, 1,000 milligrams per day or
16 1 gram per day, and that's a -- one of these
17 Splenda packages is a gram in here. So it's an
18 eighth of a teaspoon. It's just not a whole lot.
19 So it's not an outrageous thing, and I think once
20 you see that small quantity -- I'm out with my
21 chain saw sometimes working in the woods, and I
22 bet I'm probably consuming 1,000 milligrams per
23 day of dirt and dust and whatnot.

24 Q. Now, when you have something that
25 affects a group of people of one in ten, we've

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1 commonly in our laws addressed that and protected
2 them; right?

3 A. Yes, we have. We do that as a nation.
4 26 percent of American adults live with a
5 disability; and because of that, we've got the
6 Americans with Disabilities Act, the ADA. And if
7 you've ever had a family member or a friend or
8 known somebody who was in a wheelchair, you know
9 how important that is; and as a society, we make
10 accommodations for people like that. And that
11 makes us who we are.

12 The same thing -- I live in
13 Kennebunkport, Maine, and because of the pandemic
14 I began volunteering -- substitute teaching at our
15 local high school because people were getting
16 sick. And so I would go over and teach physics
17 and chemistry and biology and environmental
18 science, and I saw -- I was astounded at the
19 number of students at the high school who required
20 accommodations because of some sort of learning
21 disability. I never saw that at Penn State or
22 MIT, and I looked it up and 15 percent of all
23 public school students receive some sort of
24 special educational services. We make
25 accommodations when we have an incident rate of

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1 that type of magnitude.

2 And so here we've got sort of this -- an
3 incidence rate in the same ballpark, and so I just
4 thought it was prudent at this site to incorporate
5 this into the analysis.

6 Q. And let's be clear. Pica by itself is
7 not a problem. It's only a problem when a pica
8 child is encountering contamination?

9 A. That's correct. Some of the earliest
10 literature on pica has to do with -- they saw kids
11 with lead poisoning, and when they tried to figure
12 out why these children had lead poisoning, they
13 found they were exhibiting pica behavior. They
14 were eating lead paint, caulking, and things like
15 that in run -- in mostly run-down public housing
16 in inner cities. So no. I mean, as I said, I
17 think my daughter in the summer is eating
18 1,000 milligrams per day, but we don't use
19 pesticides. We don't use herbicides. You know,
20 we do all organic on our -- my lawn shows it.
21 I've got lots of weeds, but so -- but she doesn't
22 get sick and she's very healthy and I don't worry
23 about it.

24 Q. So the point of this exercise is not to
25 try to reduce pica but to make sure that pica

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1 children don't encounter contamination?

2 A. Correct.

3 Q. You can either do that by fencing it
4 off --

5 A. Yes.

6 Q. -- or cleaning it up?

7 A. Correct.

8 Q. Or keeping them away from it somehow?

9 A. Yeah. There's a hierarchy of risk
10 management approaches you can take, right. So the
11 risk assessors, you know, present risks, and then
12 risk managers take that information and make
13 decisions, right. And the hierarchy is usually
14 design the risk out of the system. So eliminate
15 it. So if it's a machine or a manufacturing
16 facility or something, you get that thing that's
17 posing the risk out. In our milieu here, it would
18 be clean up the site, remove the contaminants.
19 Well, the second thing would be -- the second
20 level is, if you can't design it out, you guard
21 against it.

22 So it's like a table saw. A table saw
23 is dangerous. People cut their fingers off all
24 the time and -- but if you put a guard over the
25 blade, then you can guard against -- you can

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1 reduce the risk by doing that. So that's the
2 second level, and the third level is to warn. So
3 if there's no way to remove the risk or to guard
4 against it, you put a big sign up: "Hearing
5 protection needed in this area" when you go into a
6 manufacturing facility that's maybe got some
7 diesels running or something like that, you know,
8 warning, hearing protection required in this area
9 because the decibel level is so high.

10 So, yeah, it's about managing the risk.
11 It's not about eliminating pica behavior. That's
12 impossible.

13 Q. And so what does RECAP have to say about
14 considering pica in a health risk assessment?

15 A. RECAP has a section on this, the 2144 on
16 acute health risks. And acute, according to the
17 EPA, is anything up to 14 days. And then from
18 15 days through seven years, you move into a
19 sub-chronic region, and then greater than seven
20 years is chronic. So acute, sub-chronic, and
21 chronic.

22 So in RECAP -- so this would be a one to
23 fourteen-day exposure. They -- RECAP says that if
24 you've got barium, cadmium, copper, cyanide,
25 fluoride, nickel, phenol, vanadium, lead, COCs

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1 such as these at the site. You should consider
2 that if a pica -- if a child that exhibits pica
3 behavior is there, that you may have to adjust the
4 screening standard or the RECAP standard downwards
5 to be protective of the health of that or those
6 children.

7 You'll see that they give a range of the
8 dose ranges, 25 to 60 grams per day. Remember,
9 this was 1 gram (indicating). So it would be 25
10 to 60 of these. I'm not so sure that's an
11 average dose. 1 gram a day would be an average
12 dose. This may be an event, and from my reading,
13 it is. So they recommend an acute ingestion rate
14 of 25- to 60,000 milligrams per day.

15 Q. That's probably why the EPA -- I'm
16 sorry.

17 The later versions of RECAP point you to
18 the EPA guidance for pica?

19 A. Yes.

20 Q. What is the ATSDR?

21 A. The ATSDR is the Agency for Toxic
22 Substance Disease Registry. It's a federal
23 agency. Ms. Renfroe and I talked about it in my
24 deposition. It's interesting. I rely on ATSDR
25 all the time. The ATSDR comes in, it does

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1 studies, community studies of health effects. The
2 ATSDR -- you probably -- I don't -- I haven't had
3 cable TV for over 20 years. So I don't see
4 commercials and things like that, but my friends
5 all tell me about these Camp Lejeune commercials.
6 And the ATSDR has done all of the health studies
7 down at Camp Lejeune. It's a large federal agency
8 that deals with large-scale health risks.

9 And ATSDR -- they -- number one, they --
10 this is from a document from 2018, Exposure Dose
11 Guidance for Soil and Sediment Ingestion. And
12 here they direct you to this Table 1. They say:
13 "Unless site-specific conditions warrant using
14 other rates, ATSDR recommends using the default
15 ingestion rates in Table 1 to estimate
16 site-specific doses." And you see in Table 1 --
17 in special groups you'll see the central tendency
18 exposure, and that's -- sort of the average
19 exposure is -- for pica behavior is
20 5,000 milligrams per event. 5,000 -- again,
21 remember, that's per event. Remember, RECAP was
22 25- to 60,000 per event, which is pretty high.

23 Q. And so what does ATSDR say about a daily
24 ingestion rate?

25 A. So they go on in the same document to

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1 offer a sample calculation, and they say here's
2 how you can approach this. They say ATSDR
3 recommends using these soil ingestion rates for
4 children with soil pica behavior. They recommend
5 using between 1,000 and 5,000 milligrams per
6 episode with three episodes per week. So the
7 children -- again, this is not an average daily
8 dose now.

9 So three episodes per week, and that
10 would be three out of seven days to represent a
11 dose for acute exposures or a monthly dose for
12 intermediate durations. And ATSDR has a different
13 way of categorizing the time scales of exposure
14 where we've just -- and Ms. Renfroe and I talked a
15 lot about this classification scheme here. The --
16 where the -- an intermediate duration would be
17 something less than a year. So you're in the --
18 sort of the sub-chronic region to try to match
19 apples to apples.

20 Anyway, if I take that as a range
21 between 1,000 and 5,000 milligrams per episode and
22 I take the average of that, it's 3,000 milligrams
23 per episode, and I say there are three episodes
24 per week. One week is seven days. I come up with
25 an average daily dose of 1,286 milligrams per day.

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1 So that's pretty similar to the 1,000 milligrams
2 per day that the EPA recommends.

3 Q. And let's talk about what the EPA
4 recommends.

5 A. Yeah.

6 Q. What's the daily ingestion rate
7 recommended for analyzing soil pica behavior in
8 children on a daily basis?

9 A. The EPA offers a 1,000-milligram-per-day
10 ingestion rate, and they recommend that for use in
11 risk assessments for children between the ages of
12 one and less than six years of age.

13 Q. And what about this property makes it --
14 make sense to use a pica analysis here? Is there
15 anything special about the property?

16 A. If this -- if we were talking -- if this
17 was a half-acre gasoline station site or something
18 like that, we wouldn't be having this conversation
19 right now. If somebody is going to build another
20 Quick Mart and put some gas pumps in there, it was
21 going to be all paved over, pica would not have
22 registered on my radar, and conversely, if this
23 was -- perhaps if this even was a 1/4-acre site
24 that would have been suitable for one residential
25 dwelling, I would have thought a lot harder about

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1 applying pica to it. Because, again, we're
2 talking about between 10 and 20 percent. So with
3 one house where there's a possibility of a child
4 being there. But we don't know that. So it's
5 really the scale of the property. The fact that
6 it's 1200 acres -- the nature of that property
7 that -- it's not primarily wetlands. It's upland.
8 It's an upland property, and the fact that the
9 owner has -- although he hasn't been specific
10 about it, is open to a lot of future possibilities
11 for this property, including a residential
12 subdivision.

13 Where I live I'm watching farmland get
14 turned into residential subdivisions all the time
15 year after year after year. It seems like empty
16 land -- that it's more likely that empty land will
17 be developed than developed land will be emptied.
18 It's just -- our population is growing. The
19 coastline is receding. Demographics are changing.
20 So that's what -- from my perspective when I
21 looked at this property, I said I think this is an
22 appropriate approach. Again, that's a judgment
23 call.

24 Q. And isn't it true that RECAP tells us in
25 the nonindustrial scenario that we are to protect

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1 all potential future uses?

2 A. Yes.

3 Q. The EPA actually suggests that we might
4 even have to look at pica behavior in children in
5 the 6- to 12-year-old populations?

6 A. They provide a -- yeah. They provide an
7 ingestion rate for soil pica for that age range.
8 From what -- my reading is that probably six years
9 old, seven years old makes sense, but the thing --
10 that type of behavior could generally begin to
11 trail off after that, although you do -- we see it
12 in adults as well.

13 Q. And so you went back and looked at
14 Ms. Levert's data and her formulas, and this is
15 Table 02 from her report; right?

16 A. That's correct.

17 Q. And what ingestion rate did she use to
18 arrive at a screening standard of
19 16,000 milligrams per kilogram?

20 A. Ms. Levert used the default ingestion
21 rate of 200 milligrams per day.

22 Q. Okay. You went in and did a test to
23 see -- you wanted to plug the pica behavior
24 considerations into her formula and her data and
25 see what it spit out; right? So the first step

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1 you did was what?

2 A. Yes. Well, we had a little bit of a --
3 and there was a difference in the conceptual model
4 in two respects. Number one was the time frame.
5 Ms. Levert did a 30-year exposure at the time,
6 which is perfectly acceptable, and she used a
7 200-milligram-per-day ingestion rate, which is
8 perfectly acceptable for her conceptual model. My
9 conceptual model was different. So instead of
10 30 years, I used six years. I said, well, this
11 child is going to be on this property and
12 exhibiting this behavior for a six-year period of
13 time, and instead of the 200-milligram-per-day
14 ingestion rate, I gave it a
15 1,000-milligram-per-day ingestion rate.

16 So here you see with a 30-year exposure
17 duration and the 30-year averaging time -- the
18 exposure duration is the 30 in the denominator,
19 and the averaging time is the 30 years up in the
20 numerator there. You wind up with
21 15,643 milligrams per kilogram rounded up to
22 16,000 milligrams per kilogram, and that's where
23 the -- Ms. Levert's RECAP standard comes from. So
24 it's a valid calculation.

25 Q. And so when you replace the 30 years

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1 with the six-year-old pica consideration, does it
2 change the analysis?

3 A. No. So that's -- the first thing is
4 that if you change the time domain, it does
5 nothing to the result. So this is -- Ms. Levert's
6 is still a 200-milligram-per-day ingestion rate,
7 and I've changed the exposure duration to 6 years
8 from 30 years. And it does absolutely nothing to
9 the outcome of the equation, because you're
10 dividing 6 years by 6 years. It's the same as
11 dividing 30 years by 30 years or 8 years by 8
12 years or 7 years by 7 years. It just doesn't
13 matter.

14 Q. There are some places where it does
15 matter?

16 A. It does when you get down less than a
17 year.

18 Q. Yeah. Okay. But when you use the
19 1000-milligrams-per-day pica rate suggested by the
20 EPA and DEQ and RECAP, what do you see?

21 A. We see that it has an effect on the
22 RECAP standard. So instead of 16,000 milligrams
23 per kilogram that we would allow to be left in the
24 soil, the value goes down to 3,129 milligrams per
25 kilogram of barium.

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1 Q. And at this point in the analysis, we
2 see exceedances if we use this pica consideration
3 RECAP standard?

4 A. Yes. So if you consider pica and you
5 want to manage the risk at this site, you would
6 then have to look at Areas 4, 5, 6, and 8.

7 Q. And so at this point in the analysis
8 under RECAP, either you stop here and you clean up
9 or you do a further analysis under a higher tier
10 of RECAP?

11 A. Correct. You would do -- and this is an
12 MO-2. So you would do an MO-3.

13 Q. And she didn't do that?

14 A. No.

15 Q. And you didn't do that?

16 A. No.

17 Q. Nobody did that?

18 A. Nobody has --

19 Q. So if we want to -- our decision right
20 now under RECAP that this panel has is you clean
21 up or you move forward and evaluate it further?

22 A. That seems to be the option, yes.

23 Q. Just to sum up what you talked about,
24 pica is not a rare -- it's not uncommon. It
25 should be considered where a large residential

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1 site may house a proportionally large number of
2 children. When a pica ingestion rate is used
3 instead of the default, the results indicate that
4 there are barium soil exceedances at the site;
5 correct?

6 A. That's correct.

7 Q. And then, on the dilution factor, your
8 opinion is ERM should have calculated a
9 site-specific dilution factor. In general,
10 site-specific data simply offer a higher level of
11 accuracy of defaults. When a site-specific
12 dilution factor is used with ERM's SPLP data
13 instead of this default, the results indicate that
14 there are exceedances in some of the AOIs?

15 A. That's correct.

16 Q. And, again, the option when there are
17 exceedances under these standards, under RECAP,
18 you either stop there and clean up or you go
19 further.

20 A. Correct.

21 Q. And nobody did any of those analysis?

22 A. Not yet.

23 MR. CARMOUCHE: Prior to passing the witness,
24 can we take a five-minute restroom break?

25 JUDGE PERRAULT: We'll take a five-minute

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1 break.

2 (Recess taken at 10:13 a.m. Back on
3 record at 10:23 a.m.)

4 JUDGE PERRAULT: We're back on the record.

5 Do you have anything further of this
6 witness?

7 MR. WIMBERLEY: No.

8 Thank you, Mr. Schuhmann. I have no
9 further questions.

10 JUDGE PERRAULT: We're ready for cross?

11 MS. RENFROE: Yes, Your Honor. If I may have
12 a moment.

13 JUDGE PERRAULT: You may have a moment.

14 MS. RENFROE: Thank you.

15 JUDGE PERRAULT: Take all the time you need.

16 MS. RENFROE: Thank you.

17 All right. I'm ready.

18 JUDGE PERRAULT: All right. Please proceed.

19 MS. RENFROE: Thank you.

20 CROSS-EXAMINATION

21 BY MS. RENFROE:

22 Q. Good morning, members of the panel, Your
23 Honor.

24 And, Dr. Schuhmann, good morning again.

25 A. Good morning again.

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1 Q. I want to cover just a few points of
2 clarification about the scope of your testimony.

3 So did you hear the testimony of
4 Mr. Miller yesterday? Were you listening to that?

5 A. I caught pieces of it but probably less
6 than half. So...

7 Q. Did you, by chance, hear Mr. Carmouche
8 tell the judge and the panel that your role in
9 this process was limited to the critique of ERM's
10 RECAP evaluation and specifically Ms. Levert's
11 work?

12 A. I think it's in the second paragraph of
13 the executive summary or the introduction to my
14 report. I said I think it's to contrast and
15 comment and, in order to contrast, I would have to
16 sort of perform sort of a parallel evaluation.

17 Q. Right. So you did not -- in your RECAP
18 evaluation and the report you submitted to the
19 DNR, you did not undertake to do any evaluation of
20 ICON's proposed most feasible plan, did you, sir?

21 A. I did not.

22 Q. And you did not prepare a most feasible
23 plan of your own, did you, sir?

24 A. Absolutely not.

25 Q. Okay. And you've not prepared a plan

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1 for remediation and submitted it to the DNR in
2 this case, have you, sir?

3 A. No.

4 Q. And even though your report identifies
5 areas -- in fact, some 37.7 acres of soil that you
6 say needs to be remediated for the protection of
7 human health, you have not undertaken to submit a
8 plan for that remediation or develop cost
9 estimates for that remediation, have you, sir?

10 A. No. I haven't, and even we had
11 discussions about those acres in my deposition,
12 how -- I said this is what falls out of the RECAP
13 calculations; however, much of that has to do with
14 arsenic, which I said should -- it's my opinion it
15 should not be cleaned up to what falls out of the
16 RECAP standard but, in fact, to background.

17 Q. We'll come to that in just a minute.

18 A. Okay. Great.

19 Q. I'm just trying to -- right now I'm just
20 trying to help the panel understand the scope of
21 what you're here for.

22 A. Okay. I just want to be clear on that,
23 then.

24 Q. So, in fact --

25 A. That's not what I was calling for.

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1 Q. In fact, what -- even though your report
2 says 37.7 acres need remediation, you're not
3 calling for that, and if -- I heard you this
4 morning say instead what you have undertaken to do
5 is to provide a, quote -- I think you said
6 high-level overview of Ms. Levert's RECAP
7 evaluation; correct?

8 A. Yes. Called a scoping analysis.

9 Q. And, in fact, I think you said you
10 wanted to see if Ms. Levert missed anything.

11 A. I'm not sure. Perhaps I said that,
12 yeah, but I think the second paragraph of my
13 report says it quite well. And that is to
14 contrast and comment on the risk evaluation that
15 was performed by ERM, but in order to do that --
16 in order to contrast, I had to create a risk
17 evaluation to use -- with which to perform that
18 contrast.

19 Q. And to be clear, the risk evaluation
20 that you performed was one pursuant to RECAP --
21 Louisiana's RECAP; correct?

22 A. Pursuant to? I used --

23 Q. You applied RECAP, did you not, sir?

24 A. I applied RECAP --

25 Q. Correct. Or at least that's what you

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1 undertook to do?

2 MR. CARMOUCHE: I just want to say can she
3 let him finish?

4 MS. RENFROE: I'll be glad to. I'll be glad
5 to.

6 JUDGE PERRAULT: Yeah. Don't go so fast with
7 him.

8 MS. RENFROE: Sure.

9 BY MS. RENFROE:

10 Q. Now, when preparing your RECAP
11 assessment for your -- for what you submitted to
12 the DNR in this case, you did not visit the
13 Henning Management property, did you, sir?

14 A. I did not have time to visit it, no.

15 Q. And, therefore, you didn't collect any
16 samples from the property of your own?

17 A. No. I think -- when we spoke in my
18 deposition, I said that I visited it many times
19 via Google Earth. So I've looked -- I've pored
20 over that property, but I've never physically been
21 there. So I couldn't physically collect any
22 samples.

23 Q. And not only did you not physically
24 collect any samples, but you didn't request any
25 other samples to be collected; correct?

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1 A. Oh, yeah. And in the time I had -- I
2 had about four weeks to perform my scoping
3 analysis. So some folks have been working on this
4 project for four years.

5 Q. Yeah.

6 A. So it takes a lot longer to mobilize
7 people to go out and get samples.

8 Q. Sure. And, in fact, I think you told me
9 that you prepared your report -- your RECAP
10 evaluation report and submitted it at the eleventh
11 hour because you were -- you had so little time to
12 work on it. Do you recall that?

13 A. Yeah. Well, I finished it, but I think
14 anytime I write anything, I always wish I had an
15 extra day or week to go back over it and proof it,
16 and in reading back over my report, I cringe at
17 some of the -- I cringe at some of the typos in
18 there. And Ms. Renfroe was kind enough to point
19 many of them out during my deposition.

20 Q. So another thing -- in preparing your
21 report before you submitted the RECAP evaluation
22 to the DNR or before it was submitted to the DNR,
23 you had not spoken to the landowner, Mr. Henning,
24 had you, sir?

25 A. No.

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1 Q. And so you were not aware of how
2 Mr. Henning uses -- actually uses the Henning
3 Management property when you were preparing your
4 RECAP evaluation?

5 A. "Uses," so it is currently using the
6 property.

7 Q. And you -- it --

8 A. Is that -- that's what you mean by
9 "uses." So --

10 Q. That's right. "Uses."

11 A. No. He did not represent how he is
12 using it. I visited via Google Earth. So I can
13 tell there's not storage of materials and this and
14 that. I looked. I saw there was still some --
15 what looked like oil field equipment on the site
16 and roads and things like that. So I have a bit
17 of knowledge from the satellite imagery of what
18 the property is being used for.

19 Q. Well, this morning you talked about a
20 future use of the property for a residential
21 subdivision or residential purposes; right?

22 A. Yes.

23 Q. And that was the premise -- that is the
24 premise that you've relied upon in justifying your
25 use of a pica ingestion rate; correct?

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1 A. That is correct.

2 Q. Now, before preparing your high-level
3 evaluation of Ms. Levert's RECAP report, you had
4 not read Mr. Henning's deposition, had you, sir?

5 A. No.

6 Q. And, therefore, you were not aware of
7 his sworn testimony about his plans for the future
8 of the property at the time you submitted your
9 report, were you?

10 A. I was informed via conversations about
11 what Mr. Henning's intentions were, and one of
12 those intentions was for residential purposes --

13 Q. Those were not --

14 A. In this -- excuse me.

15 Q. Excuse me, sir. Go ahead. Go ahead.

16 A. And Ms. Levert even assumed a
17 residential use for that property as well. So
18 both Ms. Levert and I both assumed that this
19 would -- that this property would or could be used
20 in the future for residential purposes. It's a
21 standard assumption in performing a risk
22 evaluation or a risk assessment.

23 Q. I'll be coming to that in just a minute,
24 but I want to take it one step at a time.

25 So I'd like to ask you if you -- and by

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1 the way, when you said you were informed by
2 conversations, those weren't conversations with
3 Mr. Henning, were they?

4 A. No, they were not.

5 Q. They were conversations with
6 Mr. Carmouche, weren't they, about the future use
7 of the property?

8 A. With counsel. And I don't recall
9 whether it was Mr. Carmouche or with Todd or with
10 both of them. But yeah.

11 Q. But not Mr. Henning?

12 A. Not with Mr. Henning.

13 Q. Did Mr. Carmouche or Mr. Wimberley or
14 anybody -- any of the lawyers for Mr. Henning show
15 you or tell you about the sworn testimony that
16 Mr. --

17 MS. RENFROE: Can we go to the Elmo, please?

18 BY MS. RENFROE:

19 Q. -- that Mr. Henning gave? And I want to
20 show it to you and ask you, sir, if, in fact --

21 MS. RENFROE: Okay. Thank you. Let's see if
22 we can get it large enough.

23 Can the panel see this?

24 PANELIST OLIVIER: Yes. Yes, I can see it.

25 BY MS. RENFROE:

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1 Q. This is the sworn testimony of
2 Mr. Henning, and at page 75, he was asked --
3 line 6: "You don't have any intention of turning
4 it into a residential subdivision or anything like
5 that, do you?"

6 And he answered: "Not that -- not right
7 now. I don't think it would sell very well."

8 And so did any of the counsel for
9 Mr. Henning tell you that he had sworn under oath
10 to this testimony, sir, before you submitted your
11 report?

12 A. Well, first of all, I think maybe you
13 and I are reading this a little bit differently.

14 Q. My question is: Did any of the counsel
15 tell you about that sworn testimony?

16 MR. CARMOUCHE: Let him answer the question.

17 JUDGE PERRAULT: Okay.

18 BY MS. RENFROE:

19 Q. That's my question. It's a yes or no.

20 JUDGE PERRAULT: Ask your question, please.

21 MS. RENFROE: Yes, sir.

22 BY MS. RENFROE:

23 Q. Did counsel for Mr. Henning advise you
24 that that was his sworn testimony, sir, before you
25 submitted your report?

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1 A. No. It would not have changed anything
2 that I did. In fact, it would have just
3 reinforced it. He just said he's not planning on
4 building a residential subdivision right now.

5 Q. Next topic -- the next question. And to
6 be clear, before this case, you had never prepared
7 a RECAP evaluation and submitted it to Louisiana's
8 Department of Natural Resources; correct?

9 A. No. So yes. Correct. I've never
10 submitted a RECAP evaluation to you folks.

11 Q. In fact, you've not submitted to DNR or
12 DEQ any type of written human health risk
13 assessment before this case; correct?

14 A. That's correct.

15 Q. And this is your first time to testify
16 before DNR in an Act 312 hearing, isn't it?

17 A. That's correct.

18 Q. Your first time to testify in a hearing
19 regarding a potential most feasible plan; correct?

20 A. That's correct.

21 Q. And as I asked you this morning -- and
22 if I don't -- I want to make sure it's very clear
23 on the record. You don't have -- based on your --
24 strike that.

25 You've not reviewed the various most

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1 feasible plans issued by DNR to understand how DNR
2 applies RECAP, have you, sir?

3 A. No. I understand that DNR is in charge
4 of risk management decisions. I perform risk
5 evaluations, risk assessments.

6 Q. So now let's --

7 A. I'm not the decision-maker.

8 Q. Let's now turn -- by the way, before
9 we -- before I turn next into the steps you took
10 to actually perform your RECAP evaluation, are you
11 familiar with the fact that Mr. Henning uses the
12 property for hunting as well as agriculture and
13 growing rice?

14 A. I'm somewhat familiar with that.

15 Q. And the fact that through hunting -- in
16 hunting he's inviting hunters to come onto the
17 property and hunt the property. You're aware of
18 that, aren't you, sir?

19 A. I'm not aware of that. I'm generally --
20 I met Mr. Henning within the last couple of days.
21 I didn't have direct conversations with him but
22 overheard conversations, and I understand that he
23 and -- and his son is a guide and things like
24 that. So I have a very superficial anecdotal
25 knowledge of Mr. Henning's intent. I know from

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1 what I heard this week that he said that he drives
2 by a piece of land where there's a new residential
3 subdivision between his property and Lake Charles
4 and that it's in the middle of an old sugarcane
5 field where he never thought a subdivision would
6 go up, but somebody has taken an agricultural plot
7 of land and turned it into a subdivision.

8 And as I said earlier, I see that
9 happening in Maine where I live where farm fields
10 are being converted to subdivisions all the time.
11 So it just wouldn't surprise me if in the future
12 if Mr. Henning or his children or grandchildren,
13 or if he conveys it, that somebody may choose that
14 use for this property.

15 Q. Now, in your encounters with
16 Mr. Henning -- though you haven't had a direct
17 conversation with him, have you advised him that
18 he needs to put up warning signs to warn the
19 hunters who are hunting on his property that they
20 may be in danger because of your analysis?
21 Because of your RECAP evaluation?

22 A. I think if people are carrying guns and
23 hunting on that property, they're probably older
24 than 12 years old, and, remember, pica tails off
25 around 12. So I just don't -- to me --

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1 Q. So you haven't --

2 A. To me -- excuse me.

3 Q. You haven't given him that advice?

4 JUDGE PERRAULT: Excuse me. Let him finish
5 his --

6 A. To me, that would be -- it would be a
7 ridiculous thing to do to warn adults about not
8 eating the soil.

9 BY MS. RENFROE:

10 Q. So let's now take the next step and look
11 at what you did with your RECAP evaluation at a
12 high level, the one that you did to, if you will,
13 check Ms. Levert's work.

14 A. And, again, it's in the second paragraph
15 of the introduction. So it's -- it was clear.

16 Q. So you analyzed soils at the Henning
17 Management property; correct?

18 A. No.

19 Q. You did not perform --

20 A. I didn't perform any analyses, no.

21 Q. Under the --

22 A. The laboratory pays -- the laboratories
23 performed the -- sorry to interrupt. I apologize.

24 Q. So let me give you a better question.
25 I'll try to be more precise with my questions.

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1 A. And I apologize for interrupting.

2 Q. With respect to the RECAP evaluation
3 that you did, you evaluated soils at the property;
4 correct?

5 A. I evaluated the analytical results from
6 ICON's data.

7 Q. Right.

8 A. Yeah.

9 Q. Likewise, you evaluated the groundwater
10 analytical data for your RECAP evaluation; true?

11 A. Correct.

12 Q. Now, the groundwater opinions that you
13 have formed are limited to what we've referred to
14 and ICON has referred to as the shallow
15 groundwater at the Henning Management property;
16 true?

17 A. Correct.

18 Q. So you're not offering any opinions
19 regarding the Chicot Aquifer, are you, sir?

20 A. No.

21 Q. Is that correct?

22 A. Yes.

23 Q. Thank you.

24 A. That's correct, and we talked about this
25 in my deposition. It appears that the Chicot and

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1 that shallow groundwater are connected to -- in
2 some respect. It appears that way where the
3 blowout -- the scar is. So it looks like there's
4 some commingling of the two units there, but
5 Mr. Miller is -- he is -- he's been working at
6 this site for four years. He's a crackerjack
7 hydrogeologist, and I would defer to him for --
8 with regards to opinions on the hydrogeology at
9 the site.

10 Q. So then another aspect -- again, just to
11 be clear on what you did and what you didn't do,
12 you did not analyze chlorides on the property as
13 part of your RECAP evaluation; correct?

14 A. I didn't evaluate chloride analyses or
15 data as part of my evaluation --

16 Q. Right.

17 A. -- correct.

18 Q. So turning now to the data that you did
19 evaluate, you did not consider in your RECAP
20 evaluation the data developed by ERM; correct?

21 A. I did consider it, but I did not
22 incorporate it into my evaluation.

23 Q. Into your RECAP evaluation?

24 A. That's correct.

25 Q. And that means that you didn't consider

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1 the hydrocarbon fractions data collected by ERM;
2 correct?

3 A. I did not consider that, and I didn't
4 consider hydrocarbons in the risk evaluation.
5 So...

6 Q. And, likewise, you did not consider in
7 your RECAP evaluation the indicator data that ERM
8 developed; correct?

9 A. What do you mean, "indicator data"?

10 Q. PAHs?

11 A. Oh, PAHs. No. I didn't, and I did not
12 run a risk evaluation on that. And I don't think
13 Ms. Levert at ERM did either. I don't think so.

14 Q. I think their RECAP evaluation will
15 speak for itself, but I'm talking about what you
16 did in your work.

17 A. Yeah.

18 Q. In developing your barium management
19 option to a remediation standard, you did not
20 account for the ERM barium speciation data;
21 correct?

22 A. When you say "ERM barium speciation
23 data," what do you mean?

24 Q. The XRD EDX analysis.

25 A. The XRD EDX analysis is -- it does not

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1 inform me.

2 Q. So let's put it like this: In your
3 barium RECAP evaluation, you assumed that the
4 barium at the site was in a mobile toxic form;
5 correct?

6 A. I assumed the barium at the site was in
7 the form that RECAP informs the evaluator to work
8 with. So you have -- there are two different
9 types of barium results that are reported for
10 laboratory analyses. The true total barium, which
11 is borne out of this program right here, DNR, and
12 "barium" barium. And LDEQ and RECAP inform us
13 that we take the "barium" barium results and run a
14 risk evaluation with those concentrations. That's
15 what Ms. Levert did, and that's what I did.

16 Q. Now, talking about the ERM data -- to
17 summarize for the panel, when you performed your
18 RECAP evaluation, you incorporated in that
19 quantitative analysis only the ICON data and not
20 the ERM data; correct?

21 A. Correct.

22 Q. And so, in doing that, you chose to
23 ignore over 1200 data points generated by ERM;
24 correct?

25 A. Yes. Yes. That's right.

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1 Q. And so you did not meet the DNR
2 expectation that all data would be utilized and
3 incorporated into your RECAP evaluation, did you,
4 sir?

5 A. Well, that's because ERM produced wet
6 weight data. The requirements are clear that in
7 order to run a risk evaluation like this, you need
8 dry weight data. ERM's data is all in wet weight,
9 and we had this conversation with Ms. Levert. So
10 these are not -- so not only are the results as
11 reported different, but the sample preparation and
12 the preprocessing before digestion is quite
13 different as well. So using -- so for a couple of
14 reasons. Number one, I had not seen any QA/QC of
15 ERM's data; but, number two, it was all wet weight
16 data and it was an inappropriate form I use.

17 Q. Now, with respect to the ICON data that
18 you did choose to use, you did not undertake to
19 independently do a QCQ- -- QA/QC analysis of the
20 ICON data, did you, sir?

21 A. No, I did not. I relied on Mr. Miller
22 just like I'm relying on Mr. Miller for the
23 hydrogeology of the site. He is -- that's his
24 bailiwick. I've worked with him before, and I
25 have a high degree of confidence in him.

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1 Q. With respect to the ERM data, you didn't
2 ask anybody to provide you with a QA/QC package or
3 analysis of that before rejecting it, did you,
4 sir?

5 A. I rejected it. It's a wet weight
6 analysis, and so the QA/QC -- I actually looked
7 through some of the QA/QC data, saw how some of --
8 some samples were -- the spikes were over. Some
9 were under, but by and large, it just -- the data
10 were inappropriate -- the ERM data were
11 appropriate for doing some sort of risk
12 evaluation. So, for example, if I was going to do
13 a risk evaluation of hunters or, let's say -- or
14 somebody riding four wheelers through the Henning
15 property after it had been raining a lot, then
16 those wet weight data might have made sense for me
17 to use.

18 But the ingestion pathway -- the soil
19 ingestion pathway, remember, is primarily dust.
20 50 percent of the normal soil ingestion pathway --
21 over 50 percent is dust. For pica it's -- we're
22 talking about soil dust and the top couple of
23 inches of soil. So we're not talking about wet
24 granular material. We're talking about a fine
25 material. Dust is -- you know, it's a micron

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1 level. It's thousands of times smaller diameter
2 than the 10 -- the number 10 mesh that a dry
3 weight analysis has passed through. A wet weight
4 analysis doesn't pass through any mesh. It's just
5 digested. So it's apples and oranges. I think
6 the ERM data again could be useful in certain
7 venues, but for my purposes it just wasn't. It
8 just wasn't of use.

9 Q. Now, you accepted ICON's data, I think
10 you just told us, based on your prior experience
11 with Mr. Miller; right?

12 A. Yes. And the fact that I could rely on
13 him, and he could -- he -- I assumed that he
14 would -- that he would be testifying to the
15 voracity of the data as well because ICON is using
16 that data.

17 Q. So you didn't just --

18 A. I'm just a small player in this -- in
19 this large piece of machinery.

20 Q. So you didn't do a -- you didn't
21 personally do any kind of peer-review analysis of
22 the ICON data before you incorporated it into your
23 RECAP assessment; correct?

24 A. It was dry weight data, and I had seen
25 those data before and worked with Mr. Miller

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1 before. I knew Mr. Miller was going to testify to
2 defend the data that had been produced by Pace
3 Laboratories and provided to his company, ICON,
4 and I didn't feel the need -- didn't feel the need
5 to go through and go through those data, and so I
6 did not.

7 Q. Likewise, you didn't do a usability
8 analysis of the ICON data like Ms. Levert did, did
9 you, sir?

10 A. I just said that I didn't.

11 Q. All right.

12 A. Yeah.

13 Q. Now, did you hear the testimony that
14 Mr. Miller gave to this panel yesterday that he
15 did not perform data validation on the ICON data
16 set?

17 A. No, I did not hear that.

18 Q. So to sum this up, with respect to your
19 use of the data for the RECAP evaluation that you
20 did, you didn't follow the RECAP rules to validate
21 QA/QC and evaluate the usability of the data? You
22 didn't do that yourself, did you, sir?

23 A. I didn't follow a lot of RECAP rules.
24 There are so many forms and things you have to
25 fill out when you submit a RECAP evaluation -- a

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1 formal RECAP evaluation to LDEQ. I didn't follow
2 any of those. So there are lots of things. This
3 was a scoping analysis that was performed within
4 the constraints of the framework of RECAP in order
5 to compare, contrast, and comment on ERM's RECAP
6 evaluation. I don't know how else to say it.

7 Q. While we're talking about the data, I
8 want to go -- and RECAP -- let's take a look at
9 what it says on the -- on this issue of wet weight
10 versus dry weight.

11 A. Yeah.

12 MS. RENFROE: Let's go to Exhibit 45, which
13 is already in evidence, please, Jonah.

14 BY MS. RENFROE:

15 Q. So on page -- I believe it's page 55.

16 A. 45.

17 Q. Well, it's our Exhibit No. 55.

18 A. Sorry.

19 Q. So page 55. But thank you for your
20 careful clarification.

21 So we have the dry weight versus wet
22 weight section on page 45 of the RECAP as you say,
23 but it is -- it's Bates page 55 for the Chevron
24 exhibit. And do you see there, sir, that -- or if
25 you look at it -- and I know you have looked at

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1 it.

2 A. Hundreds of times.

3 Q. Yes. You see that it says "analytical
4 data," and let's find that. It says: "Analytical
5 data for soil are routinely reported on a wet
6 weight basis."

7 You see that, sir. You know that's in
8 there.

9 A. I see what's written there.

10 Q. And it goes on to say: "In general,
11 most soils have a relatively low percent of
12 moisture, and the difference between the wet
13 weight concentration and the dry weight
14 concentration is not usually significant." Do you
15 see that, sir?

16 A. I see that.

17 Q. So --

18 A. And I don't see it in RECAP 2016, and I
19 don't see it in RECAP 2019. So I think that
20 that's very significant that this one paragraph --
21 and I -- excuse me, but I've -- you know, on other
22 projects I've worked on, I've seen this -- the
23 risk evaluators hang their entire evaluation on
24 this one paragraph that to me -- and I've read it
25 so many times, and I'm not the brightest bulb in

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1 the bunch. But it's a very convoluted paragraph
2 that misrepresents what typically happens. The
3 entire scientific community and the EPA reports
4 exposure concentrations in dry weight. In fact,
5 the EPA requires dry weight. I was here for
6 Ms. Levert's testimony, and she said, yes, I know
7 this is wrong and -- but I do it anyway. And I
8 know that the rest of the world is -- the EPA is
9 right, and what I do is I offer -- and excuse me
10 for paraphrasing her. She says: I offer a dry
11 weight analysis as a sensitivity analysis sort of
12 as an appendix to the report.

13 And I just don't understand. I'm really
14 at a loss as to -- if you understand that
15 something is wrong, why do you use it and perform
16 the evaluation with the wet weight data and then
17 appendicize the correct analysis as a sensitivity
18 analysis? So I just -- this entire paragraph
19 makes no sense to me. It no longer appears in
20 RECAP, and it's totally incongruous with the
21 entire scientific and regulatory community outside
22 of this one paragraph.

23 Q. Do you understand, sir, that the 2019
24 version that you keep referring to has not ever
25 been in effect? It's never been adopted?

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1 A. I understand it hasn't been promulgated.
2 So I understand you can't quote from it in a
3 regulatory framework. You can't do anything. I'm
4 just saying from a common sense perspective if
5 this is so important and it's -- I mean, here --
6 this is what we're asked to believe, is that
7 there's this one convoluted sentence upon which
8 we'll hang our hat, that we need to use wet weight
9 concentrations to perform a risk evaluation and
10 that's it and then over here are thousands of
11 pages of EPA documents, scientific documents and
12 first principles that are to the contrary. And
13 then an ERM expert comes in here and says, yes, I
14 know this wrong but I still do it. I was -- I sat
15 in here for Ms. Levert's testimony, and I couldn't
16 understand that either. So there are just a lot
17 of things about this, and it's the use of this
18 paragraph that quite frankly I'm at a loss to
19 explain.

20 Q. So we'll let the record speak for
21 itself, and we'll let Ms. Levert speak for
22 herself.

23 A. Very good.

24 Q. Are you familiar with how many times
25 Ms. Levert has provided RECAP evaluations to the

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1 DNR for oil field sites in the state of Louisiana?

2 A. I listened to her testimony. That's why
3 I say I'm baffled as to why she relies on wet
4 weight when she testified that she knows that she
5 shouldn't be using it.

6 Q. Are you familiar with her experience --

7 A. I've listened to --

8 Q. Let me finish my question, please.

9 Are you familiar with Ms. Levert's
10 experience, decades of experience, in working with
11 RECAP and with the DNR and DEQ in evaluating
12 potential human health risk using the tool -- the
13 RECAP tool? Are you familiar with that, sir?

14 A. If she's using this -- this is not a
15 tool to me. This is nonsense. I'm sorry to use
16 such a strong word, but this is just nonsense
17 and --

18 Q. You're calling Ms. Levert and her work
19 nonsense?

20 A. No.

21 Q. Is that your testimony?

22 A. I'm saying this is nonsense, and I'm
23 pointing to this quote that's on the wall. And
24 Ms. Levert in her testimony -- I don't want to
25 testify for her, but you folks heard her. As I

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1 said, I feel very strongly about this. The entire
2 rest of the scientific world and now RECAP 2016
3 and 2019 all disagree with this paragraph that
4 we're seeing up here on the wall. So if somebody
5 decides to continue using this, I don't -- I
6 simply don't understand it. I don't know why they
7 would do it. I'm not in a position to say why. I
8 just am telling you that I don't understand it.
9 To me it's nonsensical.

10 Q. You understand that the effective -- the
11 only effective version of RECAP is the 2003
12 version?

13 A. For regulatory purposes, yes, but for
14 thoughtful human beings -- when you look and you
15 understand that RECAP is an evolving document --
16 the fact that they excised this (indicating) exact
17 thing from the future iterations must inform
18 you -- if you've a thoughtful person, it must
19 inform you that maybe there was a problem with
20 this.

21 Q. So now you're suggesting that the
22 folks -- that the state of Louisiana is not
23 thoughtful or well-informed because of the version
24 of RECAP that is the law does -- that you disagree
25 with it?

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1 A. I just said -- I believe I said exactly
2 the opposite. The folks at DEQ are thoughtful
3 and, because they're thoughtful, they've gotten
4 rid of this paragraph that you've got up on the
5 wall. They got rid of it. It's gone. So
6 hopefully we'll never have to talk about it again.
7 I see it in report after report after report.
8 Usually, they -- well, I won't go there.

9 Q. Let's be clear.

10 A. Yeah.

11 Q. In the effective version, the only
12 version of RECAP that is the law, it is included.

13 Let me move on. You've never spoken to
14 anyone at LDEQ about its views on whether RECAP
15 requires wet weight, have you, sir?

16 A. No.

17 Q. And you've never spoken to anyone at the
18 DNR about their views on the RECAP requirement for
19 the use of wet weight data, have you, sir?

20 A. No. But I'd like to.

21 Q. And you don't know how many RECAP
22 evaluations the DNR has accepted based on wet
23 weight data, do you, sir?

24 A. No.

25 Q. Now, you know that Ms. Levert -- I think

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1 you just told us she did provide to the DNR dry
2 weight data as well as wet weight. You're aware
3 of that, aren't you, sir?

4 A. Dry weight evaluation --

5 Q. Yes.

6 A. -- yes.

7 Q. Let's move on to a different topic, and
8 that is -- let's now take a look at the RECAP soil
9 evaluation that you did. And I want to start with
10 your discussion about pica and what you had to say
11 about that in your presentation this morning.

12 So if I understand correctly, you've --
13 you -- it's your view and your testimony this
14 morning that in the direct -- in the soil direct
15 contact analysis that you did under RECAP, that
16 you believe a pica ingestion rate of
17 1,000 milligrams per day should be used, and
18 that's what you used; right?

19 A. Correct.

20 Q. Instead of the 200 milligrams per day
21 that Ms. Levert used based on the RECAP default
22 standard; correct?

23 A. That's correct.

24 Q. So that's what the debate is about, your
25 view that pica ingestion rate of 1,000 milligrams

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1 should be used versus the RECAP default of 200?

2 A. If you'd like to call it a debate, then
3 yes.

4 Q. Now, you don't have any evidence that
5 children currently reside at the Henning
6 Management property; correct?

7 A. No. I doubt that children are residing
8 there.

9 Q. And with respect to any children that
10 may reside there in the future, you have no
11 evidence that those children would engage in pica
12 behavior, do you, sir?

13 A. This is about possibilities and
14 probabilities, and I think I presented the data
15 that shows that if -- that we're talking about
16 percentages that are similar to people with
17 physical disabilities and kids with learning
18 disabilities. And so, to me, that informs me that
19 there is a reasonable probability that there will
20 be a child or children on this site if there is a
21 residential subdivision.

22 Q. I think you just said you're talking
23 about a hypothetical that might happen sometime in
24 the future.

25 A. Absolutely. This is all a

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1 prospective -- prospective assessment.

2 Q. So it's your view that the soil pica
3 ingestion rate should be used to evaluate a
4 potential human health risk on any land that could
5 be used for residential purposes?

6 A. That's not what my testimony reflected
7 earlier. I said there's -- because of the nature
8 of this site -- the nature and size of this site,
9 you -- it has the potential to have a lot of
10 children on it. Remember, I said if we had a
11 1/4-acre site that could have one residential home
12 on it where there would be one family, we might
13 expect 1.6 children to live on that property, then
14 there's a low chance that those 1.6 children will
15 exhibit pica behavior. But if we have a
16 subdivision with 20 homes and 10 percent of
17 children -- let's say -- let's just use 10 percent
18 to make the math simple. Then I can -- then we
19 can sort of go through a thought exercise that
20 there might be two children in that subdivision
21 with -- that exhibit pica behavior, and that, to
22 me, makes it real. One home doesn't.

23 Q. So you would say that any land that's
24 going to be used for residential purposes -- any
25 place where children would have access to the soil

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1 and where there are potential for significant
2 numbers of children, that's when you say a pica
3 ingestion rate should be used?

4 A. I'd have to think about it before I give
5 you a flip answer here. What I can tell you is
6 that I evaluated the Henning property, and based
7 upon the size of the Henning property, the nature
8 of the Henning property, good upland -- the soil
9 and land and because of its potential for future
10 residential subdivision, it could be quite large.
11 That's why in this case I opted to perform a pica
12 assessment.

13 Q. And, in fact, do you remember telling me
14 in your deposition that failure to use a pica
15 ingestion rate for property that could be used for
16 future residential purposes would be derelict?

17 A. Yeah, it would have been derelict for
18 me. That's the way I feel about it. I said it
19 would have been derelict for me to not consider
20 pica in this -- for this property -- for the
21 Henning property.

22 Q. And so are you saying that it was
23 derelict by -- on Ms. Levert's part not to have
24 evaluated or incorporated a pica ingestion rate in
25 her RECAP analysis?

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1 A. I would not impose my ethics and my code
2 of ethics on somebody who's not -- I'm an
3 engineer. So I have a professional code of
4 ethics. Ms. Levert -- I don't know if she's a --
5 I'm not quite sure of her background. I don't
6 know what hers is, but I can tell you that for
7 me -- my ethical code calls for me to protect
8 human health and the environment, and when I
9 looked at this case, this property, it called --
10 from my perspective it called for me to consider
11 pica behavior because of the potential. Again, if
12 it was one house or if there was a gas station or
13 if it was a retirement home, we wouldn't be having
14 this conversation.

15 Q. So I want to show you the testimony that
16 you gave when I asked you this question because I
17 think it really is important to help understand
18 what your testimony really is.

19 MS. RENFROE: So if I can have the Elmo,
20 please, Jonah.

21 BY MS. RENFROE:

22 Q. So, Dr. Schuhmann, I asked you at,
23 page 119, line 8: "I'm asking you what
24 site-specific conditions warrant the use of a soil
25 pica ingestion rate?"

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1 And your answer was: "I would say that
2 any land that's going to be used for residential
3 purposes or for a school or a community center --
4 anyplace where children will have access to that
5 soil and where there are the significant -- the
6 potential for significant numbers of children to
7 have access to that soil, then you're being
8 derelict by not including pica in your
9 assessment."

10 A. Yeah. I think I said it better there
11 than I did here today. But, yeah, community
12 centers, schools. So I didn't mention that here
13 this morning, but, right, these are all important
14 site-specific considerations.

15 Q. Now, let's --

16 A. Gas stations and parking lots and
17 apartment buildings and things. No, not so much.

18 Q. So now let's get this -- let's
19 have the -- let's get our understanding a little
20 more precise so I can understand and the panel can
21 understand a little more precisely the differences
22 between you and Ms. Levert.

23 As you said a moment ago, you know that
24 Ms. Levert, in fact, incorporated a residential
25 scenario in her RECAP assessment, didn't she?

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1 A. Yes.

2 Q. And so her analysis assumed a future
3 residential scenario with children, didn't it?

4 A. Yes, it did.

5 Q. And so the difference between her
6 analysis and your view of what would or would not
7 be derelict is that she used the ingestion rate
8 prescribed by RECAP and you did not?

9 A. That's correct. I used the EPA
10 ingestion rate.

11 Q. And so then what we -- what I want to
12 talk to you about is something that you mentioned.

13 MS. RENFROE: And if we can now go to my
14 Slide 1, please, Jonah.

15 BY MS. RENFROE:

16 Q. Earlier in your testimony, you talked
17 about the EPA, and I think that you and
18 Mr. Wimberley showed the panel and included in
19 your slides the EPA. But you would agree with me,
20 sir, that the default residential soil ingestion
21 rate in the EPA prescribed by the EPA is not a
22 pica rate; correct?

23 A. That's correct.

24 Q. It's 200 milligrams per day; right?

25 A. Correct.

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1 Q. That's the same rate that Ms. Levert
2 used based on RECAP, isn't it?

3 A. Yes.

4 Q. So --

5 A. This is the same table I showed to you.

6 Q. Right.

7 A. You can see the soil pica and geophagy
8 too. In fact, that's -- see, the 50,000 there
9 is -- we saw in RECAP. Remember, it was between
10 25- and 60,000. So that's why I thought that was
11 geophagy.

12 Q. So I want to be very clear, though,
13 because Mr. Wimberley asked you a question at the
14 end of your testimony about whether the EPA and
15 DNR and RECAP required the use of a pica ingestion
16 rate, and you said yes. But the default rate in
17 the EPA is not a pica rate, is it, sir?

18 A. No. It's sort of like the Summers
19 dilution factor. It's a default.

20 MS. RENFROE: And if we can go to the next
21 slide, please, Jonah.

22 BY MS. RENFROE:

23 Q. The DNR and the DEQ -- they -- even in
24 their residential scenario, including children,
25 that default standard is 200 milligrams per day,

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1 isn't it?

2 A. It is.

3 Q. That's why Ms. Levert used that
4 ingestion rate, isn't it?

5 A. Yes. It's not unusual.

6 Q. And so we don't want to suggest and we
7 don't want any confusion in the record that DNR or
8 DEQ requires a pica rate of 1,000?

9 A. No.

10 Q. If you said that, that was a mistake,
11 wasn't it?

12 A. If I said that DEQ requires a pica
13 ingestion rate of 1,000 milligrams per day, then I
14 misspoke.

15 Q. Okay.

16 A. The DEQ actually says between -- what is
17 it? 25 and -- 25,000 and 60,000 milligrams per
18 day, but I think that's per event. We talked
19 about that earlier. That was under the -- that
20 acute section.

21 Q. Now --

22 A. And, again, it -- this is a difference
23 in two evaluators creating two conceptual models
24 for this site. And if somehow it appears that I
25 was impugning Ms. Levert, I want to have it be on

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1 the record that I was not. I was -- what I
2 intended that meaning to be is that I would have
3 been derelict not to consider pica behavior at
4 that -- this site.

5 Q. And in addition to the fact that DNR and
6 DEQ don't require use of pica behavior -- you
7 know, Mr. -- there's been some testimony in the
8 case about Texas, and I'm just -- I happen to be
9 from Texas. I thought I would take a look.

10 And just around -- you know, just to
11 understand who requires pica -- and Texas, the
12 commissioner on environment quality, they don't
13 require a pica ingestion rate for their
14 residential scenarios, do they, sir?

15 A. No. And DEQ doesn't require it either.
16 They just have a section on it and said -- and DEQ
17 says you should be aware of this and as, an
18 evaluator, consider it.

19 By the way, I've been a Texas resident
20 twice, and I learned risk assessment at the
21 University of Houston when I came out of the oil
22 fields. And the first -- I took a course in
23 chemical engineering at U of H. It was a course
24 in environmental remediation 30-plus years ago,
25 and the first risk assessment I did was that of

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1 pica. Back in those days from my recollection --
2 I'm going back 30 years now -- pica was a fairly
3 standard default for Superfund risk assessments.

4 Q. Of course, we're not talking about a
5 Superfund risk assessment in this case, are we?

6 A. No. And we're 30 years divorced from
7 that day at the University of Houston.

8 Q. So checking around the country and
9 looking at few other states to see what they do --
10 New Jersey as an example, they don't have a pica
11 as their default ingestion rate for residential
12 scenarios, do they?

13 A. No. And I could probably cut this
14 short. Nobody has a pica as a default for the
15 ingestion rate.

16 Q. Even in the state of Maine where you
17 live, they don't use a pica as a default ingestion
18 rate, do they?

19 A. Nobody does.

20 Q. 200. Right. So --

21 A. There's a default pica rate embedded in
22 the ATSDR tables and the EPA tables, but the
23 evaluator has to make that decision.

24 Q. Now, I'm almost finished with this
25 topic, but I just wanted to understand -- and now

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1 I think we do.

2 There's nobody around the country, at
3 least the states that we've talked about so far --
4 and as you've just admitted now, nobody calls for
5 an ingestion rate of -- a pica ingestion rate of
6 1,000 milligrams per day for residential scenario
7 as a default, do they?

8 A. No. Because you could have a single
9 property that's got contamination on it, and it
10 wouldn't make sense to set that as a default.
11 That's --

12 Q. And another --

13 JUDGE PERRAULT: Let him finish, please.

14 MS. RENFROE: Sorry.

15 A. Again, it's contextual. So if we had
16 one property where there was a spill of
17 something -- and then you wouldn't -- it's a
18 single property. Why would you apply a pica rate
19 when there is maybe the probably of it's one in 20
20 or one in ten that a child there is going to -- is
21 going to exhibit pica behavior? I mean, you could
22 go check the property and go observe, but I --
23 it's not that I disagree with the 200-milligram
24 default rate. I think it makes sense, but as risk
25 evaluators, if you're looking at a scenario where

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1 you could potentially have a lot of children and
2 there's broad contamination, then it's just quite
3 simply my opinion it should be considered.

4 BY MS. RENFROE:

5 Q. You know, you were talking a moment ago
6 about the 2016 and 2019 drafts of RECAP. Did you
7 know that pica is not mentioned in either one of
8 those drafts?

9 A. Yes, that's right. RECAP is -- it
10 pushes things to the EPA. It's -- the entire
11 document is predicated upon the EPA. So, yeah,
12 I've looked at those versions.

13 Q. Let's now take the next step in
14 evaluating what you did in your high-level
15 evaluation of Ms. Levert's work. So I want to
16 talk specifically now about your soil direct
17 contact evaluation.

18 A. Uh-huh.

19 Q. Fair? You with me?

20 A. I'm with you.

21 Q. For your soil direct contact evaluation
22 under RECAP, you only used a pica ingestion rate
23 of 1,000 milligrams per day?

24 A. Correct.

25 Q. That's the only way that you performed

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1 this analysis; right?

2 A. Correct.

3 Q. Right.

4 A. To compare and contrast and comment upon
5 ERM's work.

6 Q. So let's now talk specifically about
7 what standard you calculated for arsenic in soil.

8 A. If you'd like -- again, I really -- for
9 the purposes of this hearing, my opinions on
10 arsenic are -- I really don't have any. There's
11 naturally occurring arsenic at the site. It's
12 present there at over 6 milligrams per kilogram.
13 When you run through the RECAP calculations, the
14 soil ingestion calculations, you get a RECAP
15 standard of, I think, four. So it just -- it
16 doesn't make physical sense because it's the
17 RECAP -- the RECAP standard is telling you to
18 clean up to less than the background, and I --
19 that doesn't make sense to me.

20 Q. So using your application of the pica
21 ingestion rate of 1,000 milligrams per day and
22 then running -- performing your soil direct
23 contact evaluation for arsenic, you derived a
24 standard of 4.69 milligrams per kilogram; correct?

25 A. It's possible.

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1 Q. Well, it's in your report.

2 A. I just -- I'm sorry. I just don't have
3 my report here, and you went out to two decimal
4 places. But it's around -- it's 4-something,
5 yeah.

6 Q. I give you my word as an officer of the
7 court.

8 A. All right. I'll take it. I'll take it.

9 Q. I'm just quoting you.

10 And you accept, I think, as you just
11 said, that that arsenic standard that you
12 calculated -- again, using your pica ingestion
13 rate -- is below the state background for arsenic
14 of 12?

15 A. Well, it's -- and I would prefer to talk
16 about the site-specific background that was
17 calculated for the Henning site of 6 point
18 something.

19 Q. Sure.

20 A. You probably have it there.

21 Q. I do, yeah.

22 A. But yeah. I would prefer to talk about
23 the site-specific because the -- I take a little
24 bit of issue with using the statewide arsenic
25 background level because it's quite variable.

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1 Higher in some places, and it's lower in others.

2 Q. That's fine.

3 A. So we have site-specific data. I think
4 we should look at that.

5 Q. Sure. I'm happy to.

6 You calculated a site-specific
7 background for arsenic -- either you or ICON
8 did -- of 6.23 --

9 A. Correct.

10 Q. -- milligrams per kilogram; right?

11 So, again, the point here is -- using
12 your pica ingestion rate, your calculation comes
13 up with an arsenic standard that is below even the
14 site-specific background for arsenic for soil?

15 A. Here in Louisiana, yes.

16 Q. All right.

17 A. If we were somewhere else that was
18 devoid of arsenic. We just happen to have quite a
19 bit of arsenic in the soils down here.

20 Q. Moving to barium --

21 A. But if we were in another state where
22 there was -- where the background concentration of
23 arsenic was .1 milligrams per kilogram, well then
24 that might make some sense. It might imply that
25 there was mud acid used, and then -- so what we're

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1 seeing if we see 4 milligrams per kilogram that --
2 and the background is .1, maybe that has to do
3 with something -- some anthropogenic activities
4 and some pollution.

5 Q. So essentially you're telling us that
6 your soil direct contact standard that you
7 calculated for arsenic using your ingestion rate
8 of -- a pica ingestion rate really makes no sense
9 given the site-specific background?

10 A. Yes. I would never come in here and
11 suggest that that RECAP standard of 4 milligrams
12 per kilogram should drive a cleanup to below
13 background. That's -- I just want to be very
14 clear on that, and I thought I was in my
15 deposition. So if that's sketchy to anybody, let
16 me know, and I'll say it again.

17 Q. I thought that your testimony about
18 children and the potential use of this property
19 for children rendered the property unsafe, and now
20 you're telling us that we should ignore what you
21 said in your report when you said on the
22 conclusion -- your conclusions of your report on
23 page 23, you included arsenic as -- within the
24 areas that needed to be remediated. So let's be
25 clear. What are you telling this panel,

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1 Dr. Schuhmann?

2 A. I'm not going -- I think I was really
3 clear what I was telling the panel, and I told you
4 the same thing in my depositions about these
5 conclusions -- is that if you crank the handle on
6 RECAP, the RECAP standard that comes out of that
7 machine is a RECAP standard of 4 point something
8 milligrams per kilogram, and according to that
9 RECAP standard, these would be the AOIs that would
10 need to be remediated; however, I thought I was
11 really clear in my deposition. I'll say it again.
12 It's my opinion that -- and I talked about the
13 fact that I felt I was compelled to put that in
14 this report but because in order to -- in order
15 for DEQ to allow you to clean up to a
16 site-specific standard, you have to go apply for
17 that.

18 So there's a whole process. I didn't
19 have the process. I just reported that -- what
20 AOIs were in excess of the RECAP standard that I
21 calculated, but in my deposition, as I'll do here
22 again right now -- is that I would not expect a
23 site to be cleaned up to some standard below
24 background. Now, with respect to the health
25 effects, the potential health effects for children

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1 at a site like this, well then, you know, we go
2 through that hierarchy of risk management; right?

3 If you can't design it out -- so if you
4 can't remove it, what's the next thing to do?

5 Guard against it. If you can't guard against it,
6 then you warn. So -- and, again, I'm not here
7 this morning in a risk management role really.

8 But those would be the types of things that I
9 might suggest for a site like this. But for many
10 places in Louisiana -- there are probably places
11 with higher arsenic concentrations than this.

12 Q. So I just -- I have a very, very simple
13 and direct question.

14 A. Yes.

15 Q. This is page 23 of your report --

16 A. Uh-huh.

17 Q. -- that you submitted to -- or that was
18 submitted to DNR, and in your conclusion you say
19 that there are -- all five soil areas of
20 investigation created for arsenic exceed the soil
21 and require remediation. Are you now changing
22 this and so we should delete that sentence?

23 A. I changed it back when we spoke in
24 November. It exceeded the -- all five -- no. You
25 shouldn't have crossed that out. You should have

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1 crossed out everything except that. You should
2 have just crossed out "require remediation."

3 Q. All right.

4 A. All five of the soil AOIs created for
5 arsenic exceed the soil NI.

6 Q. Okay. But you're not --

7 A. That's correct.

8 Q. But you're not saying they should be
9 remediated?

10 A. That's not my business.

11 Q. So let's move on. So for barium for
12 your Management Option 2 standard, you calculated
13 3,129 milligrams per kilogram --

14 A. Correct.

15 Q. -- correct?

16 And you did that assuming that the
17 barium at the property was not barium sulfate;
18 correct?

19 A. I complied with RECAP. I drove down
20 between the guardrails of RECAP, and I performed
21 that soil NI assessment according to RECAP just
22 like I did for arsenic.

23 Q. If this panel concludes that the barium
24 at the Henning property is, in fact, barium
25 sulfate, then you would agree that your barium

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1 direct contact standard for soil would be
2 inappropriate?

3 A. If somebody -- that's a big
4 hypothetical. So that would -- I've never heard
5 of that happening, but it could. I'm not saying
6 I've heard everything there is to hear about it,
7 but it would certainly deviate from a standard
8 RECAP evaluation. And it would deviate from a
9 standard EPA risk evaluation as well, but I'm not
10 saying that it couldn't happen.

11 Q. That's not what I asked you, sir,
12 respectfully.

13 A. So I apologize.

14 Q. So I asked you --

15 A. I need you to ask it again.

16 Q. My question is very direct. If this
17 panel were to conclude that the barium at the
18 site -- excuse me.

19 If this panel were to conclude that the
20 barium at the site is barium sulfate, then the
21 barium soil direct contact standard that you
22 calculated would not be appropriate, would it?

23 A. That's a -- it's not a simple question
24 that you've asked. There's a great paper -- it's
25 a 1989 paper by Lloyd Duell. It's about 29-B, and

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1 in there he discusses -- and I happen to -- I
2 worked with Lloyd Duell on a big oil tank. It was
3 a pit case down in Houston 20, 25 years ago or so,
4 but Dr. Duell wrote this paper. And he talked
5 extensively about the ability for barium sulfate,
6 barite, in wet soils to be a reservoir or a source
7 for solubilized barium, and he said that really
8 the only place that you don't have to worry about
9 leaving barite in the soil is in a dry, oxygenated
10 environment. It's a good paper. It's about 29-B.
11 Duell is his last name. D-E-U-L [sic].

12 So what happens is when we take barite,
13 barium sulfate, and put it in an anaerobic
14 environment where we have sulphate-reducing
15 bacteria, the bacteria will eat maybe hydrocarbons
16 that are there in the soil. And they will breathe
17 the sulfur from the sulphate molecule that's
18 hooked up with the barium. So the sulphate will
19 go from a positively charged ion to a negatively
20 charged ION and will become the terminal electron
21 acceptor for the microorganism. So the
22 microorganisms actually will transform barium
23 sulfate into barium sulfide, and the barium
24 sulfide can dissociate in the water when it
25 dissolves. And then you've got barium ions and

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1 sulfide ions.

2 So it's a bit of a complex issue.

3 Dr. Duell does a good job that, at the end of the
4 day, you can be -- you can feel confident and safe
5 about leaving barium out there in the environment
6 if you're in a dry, arid, oxygenated environment,
7 and I'm just not so sure the Henning site is a
8 dry, arid, oxygenated environment.

9 Q. So back to my question. Do you remember
10 telling me at your deposition under oath that if
11 you thought there was anything -- if you thought
12 the barium at the site was barium sulfate, then it
13 would not have been appropriate for you to have
14 used the barium toxicity factor that you did?

15 A. Right. If you could prove that all the
16 barium was barium sulfate -- there is no reference
17 dose for barium sulfate. There is -- a reference
18 is sort of like the minimum risk level. There
19 isn't. It's used in medical applications, right?
20 So doctors give it to patients to ingest, but
21 that's -- I just think it's a different topic.

22 Q. I'm going to move now to your soil --
23 the soil for a groundwater protection standard
24 that you calculated in your RECAP evaluation. You
25 calculated a proposed Management Option 2 soil for

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1 a groundwater protection standard; correct?

2 A. Yes.

3 Q. And for arsenic your calculated standard
4 was 1.7 milligrams per kilogram; right?

5 A. And, again, I'm going to have to agree
6 with you because I don't have a copy of my report
7 and you're going extensively into multi-decimal
8 numbers. So...

9 Q. I'm sorry. I thought you would have
10 brought it with you, but I've got a copy for you.

11 A. Thanks.

12 Q. I don't want you to have any doubt, sir.
13 I'm not trying at all to misquote you.

14 A. Yeah. And I think that was based upon
15 the KD, the distribution coefficient.

16 Q. So my question is -- let me be very
17 clear so you don't lose sight of it. The arsenic
18 standard that you calculated --

19 A. Yes.

20 Q. -- MO-2, was 1.7 milligrams per
21 kilogram; correct?

22 A. Yes. Based upon the KD value. So I
23 took site-specific data from -- well, boring H-3
24 and looked at the soil concentrations and then
25 looked at the underlying concentration of arsenic

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1 in the groundwater; and from that, you can
2 calculate a distribution coefficient, KD . And
3 this is all in RECAP, and from the distribution
4 coefficient, the RECAP provides another equation
5 where you can calculate a soil groundwater value.
6 So using site-specific data and using RECAP
7 equations, this was the number. This is -- we're
8 talking about 1.7 milligrams per kilogram?

9 Q. Right.

10 A. That's the concentration that emerges
11 if you use site-specific data and the equations
12 that are provided by RECAP. Again, just like the
13 4 point whatever milligrams per kilogram of
14 arsenic emerges if you use the soil NI.

15 Q. So you understand, sir, that that -- the
16 standard you calculated for soil is below the
17 statewide arsenic background?

18 A. Yes. Below the -- it's below the
19 site-specific arsenic background.

20 Q. Right.

21 A. Yeah. But it's calculated with
22 site-specific data. Why is that number lower than
23 the background? I can't tell you that; however,
24 what I did was I took site-specific data. I used
25 the RECAP equations, calculated a distribution

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1 coefficient, and this is what emerged.

2 Q. So it's your opinion, then, that
3 1.7 milligrams per kilogram of arsenic in soil is
4 not protective of underlying shallow groundwater?

5 A. No. That's what emerges from this
6 calculation based upon boring -- what did I say it
7 was? H-3? Yeah. And we don't have a whole lot
8 of site-specific data to work with. This is on
9 page 17 of my report if you have it there. I
10 don't know.

11 Q. So here's my next question.

12 A. Yeah.

13 Q. Would you agree that there is not a
14 single detection of arsenic above the RECAP
15 screening standard in any of Chevron's limited
16 admission areas?

17 A. You'll have to say that again.

18 MR. CARMOUCHE: Judge, I might be able to
19 speed things up. I'll stipulate for this
20 hearing's purposes that we're not saying nor
21 are we asking this panel to evaluate arsenic
22 as migrating to the groundwater, and I think
23 it's very clear in our most feasible plan and
24 our comments but -- so maybe we can stipulate
25 to that so we can get away from arsenic

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1 because --

2 JUDGE PERRAULT: Ms. Renfroe, does that
3 stipulation change your approach here?

4 MS. RENFROE: I will move on, but I'm trying
5 to understand and help -- let the panel
6 understand Dr. Schuhmann's work here, and so
7 I'll move on to barium. But I would like
8 to -- I think I have an answer to my
9 question.

10 BY MS. RENFROE:

11 Q. The standard you calculated for arsenic
12 is below the statewide and site-specific standard;
13 correct?

14 A. The concentration that emerges if you
15 use the site-specific data and we don't -- we have
16 very little of it where we have data where we have
17 arsenic in the soil and arsenic in the
18 groundwater. We just don't -- we don't have a
19 whole lot of data where in one boring you can have
20 a soil concentration as well as contaminants in
21 the groundwater.

22 Q. So let's move to barium.

23 A. That's a --

24 JUDGE PERRAULT: Let him finish, please.

25 A. That's unusual. I've looked around a

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1 lot, and I found one. I would have done more
2 analyses, and my mantra is a point is a point.
3 Two points are a line, and three points are a
4 thesis. Every -- all I had was one point. So
5 Ms. Renfroe is making a good point here in that if
6 I use that site-specific data -- if I calculate a
7 KD and then I calculate a soil GW from that, you
8 wind up with a very low concentration, but that's
9 all the data we had at the site. I didn't really
10 comment on this, though. I think I didn't make a
11 bill deal out of it. Again, this is a scoping
12 analysis.

13 What I wanted to do was run through all
14 of the RECAP calculations and see what emerged
15 using site-specific data and then see if I could
16 compare and contrast this with ERM's work, and ERM
17 didn't do any of this. It didn't calculate any
18 KDs. It didn't move on to this at all.
19 Because from my perspective, they used the wrong
20 DF Summers. If they hadn't used the wrong DF
21 Summers, then they might have done these
22 calculations. And they may have run up against
23 the same problems I had, and that is I only had
24 one data point.

25 BY MS. RENFROE:

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1 Q. Moving to barium now, sir. You ready?

2 A. Yes.

3 Q. I'm trying to get us finished before
4 lunch. It may not happen, but I'm doing my best.

5 A. All right. I'll try to do my best too.

6 Q. Thank you.

7 A. You're welcome.

8 Q. So for barium you calculated a soil to
9 groundwater protection standard under Management
10 Option 2 of 289 milligrams per kilogram?

11 A. Yes.

12 Q. And that standard is also below the
13 background standard for barium at the site that
14 you calculated, isn't it?

15 A. That's correct. Again, that was from
16 boring H-12. One point within the entire site --
17 there was one point -- one data point I could find
18 where I could -- in the same boring I had soil
19 data and I had groundwater data because that's
20 what I need to calculate the distribution
21 coefficient, the KD. I could only find it in one
22 boring.

23 From that boring -- well, number one,
24 the KD was 145. So what that tells me is that for
25 every 145 milligrams per kilogram of barium that I

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1 have in the soil, I wind up with 1 milligram per
2 liter of barium in the groundwater. That's what
3 the distribution coefficient tells you.
4 145 milligrams per kilogram will get you
5 1 milligram per liter.

6 Now, ERM --

7 MS. RENFROE: Your Honor, may I ask -- the
8 witness is going far afield from what I've
9 asked about.

10 JUDGE PERRAULT: Have you gone far afield
11 from what she asked?

12 THE WITNESS: I apologize, Your Honor. I
13 think I have. I've been known to do that.

14 JUDGE PERRAULT: That's all right. Let's not
15 do that anymore.

16 A. Thank you for your patience. I...

17 BY MS. RENFROE:

18 Q. Well, we need to thank the panel.

19 A. Yeah.

20 Q. But let's move on.

21 A. That's all right.

22 Q. So the point is this: You calculated
23 that barium standard for protection of
24 groundwater, you understand from the testimony
25 that's already been offered that barium is in the

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1 upper 1 -- 0 to 2 feet of the soil fairly
2 throughout the property. You understand that,
3 sir, don't you?

4 A. Yes. I'm just looking at the --

5 Q. Sir, it's a direct question.

6 A. -- the soil concentrations. But I'm
7 sorry, but when I calculated the KD for barium, I
8 used concentrations from 0 to 4, 4 to 6, and 8 to
9 10. So I actually saw the highest concentration
10 at H-12 between 4 and 6 feet, not 0 and 2 feet.

11 Q. Right. All right.

12 A. So I just want to be clear.

13 Q. Here's the point.

14 A. Yeah.

15 Q. You calculated a soil for protection of
16 groundwater standard for barium, and you
17 understand barium is in various places throughout
18 the property; correct?

19 A. Correct.

20 Q. All right. And you've talked about
21 H-12. You've heard testimony, I take it -- at
22 least the panel has -- that the barium is
23 generally located in the upper 2 feet of soil at
24 the property?

25 A. I would agree to that. So generally,

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1 yes.

2 Q. And so would you agree with me, sir,
3 that if barium were leaching through the soil
4 column and reaching the shallow groundwater, then
5 it would have to do that by moving downward
6 through the soil column?

7 A. Yes.

8 Q. Right. And that's not something that
9 you evaluated before you submitted your RECAP
10 evaluation, was it, sir?

11 A. Nobody has evaluated that, and to me
12 it's a pretty big deal. Because, again -- and I
13 talked about this in my deposition. We discussed
14 this. I brought this up -- is that this entire
15 evaluation of the soil to groundwater pathway is
16 predicated on an unconfined aquifer. Well, in
17 this case when the slug tests were analyzed using
18 both the Hvorslev, which is for a confined aquifer
19 and by ICON also, using the Bouwer and Rice, which
20 is for a leaky aquifer. And I would consider this
21 aquifer to be -- and I think everyone has kind of
22 agreed on it, that the aquifer is confined and
23 leaky.

24 So -- and I said this in my deposition,
25 that this whole soil to groundwater pathway --

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1 that the RECAP machine you plop these numbers into
2 is -- probably requires an MO-3, a site-specific
3 fate and transport evaluation because the MO-2
4 level makes you assume that it's not confined, and
5 we know that it's probably primarily confined.
6 Maybe that's why we don't see as much groundwater
7 contamination, but certainly there are areas where
8 the groundwater is contaminated but --

9 Q. You're not saying that H-12 is the only
10 location of unconfined shallow groundwater, are
11 you?

12 A. No. In fact, I think I said -- I talked
13 about my dissertation earlier. I learned one
14 thing. Like, everything leaks. Even a confined
15 aquifer leaks. Everything leaks. Just some
16 things leak faster than others. So this is a big
17 site. It's heterogeneous. It's anisotropic. The
18 confining layer is probably discontinuous. It's a
19 complicated site. It is a -- there's a -- like, a
20 hydraulic hole up in the north there.

21 Q. Didn't you use the word nonhomogenous?

22 A. Inhomogeneous, yes. Right.

23 Q. So the shallow groundwater is
24 nonhomogenous, or inhomogeneous; right?

25 A. The aquifer material is, yeah.

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1 Absolutely. Most aquifers are inhomogeneous.

2 Q. Let's move on now to understand what is
3 the effect of your barium groundwater protection
4 calculation.

5 So let's look at H-2. You just
6 mentioned that, and I've got an image of it if I
7 can --

8 MS. RENFROE: Jonah, let's go to Slide 8.

9 A. H-2 or H-12?

10 BY MS. RENFROE:

11 Q. Here we go. I want to show you -- if we
12 can start here.

13 A. That's H-4.

14 Q. I'm sorry. Area 2.

15 A. Okay.

16 MS. RENFROE: Jonah, we need to back up one.

17 Slide 8. Slide 8. Thank you. My
18 fault.

19 BY MS. RENFROE:

20 Q. Okay. Here we are. Area 2 barium
21 profile at H-11. All right, sir? Are you with
22 me?

23 A. I'm with you.

24 Q. All right. Now we see that -- we've got
25 the ICON in the 0 to 2 feet. 2,740; right?

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1 A. Uh-huh.

2 Q. And then in the 4- to 6-foot zone, the
3 ERM data and the ICON data show that the barium
4 concentration has fallen below your calculated
5 background concentration; correct?

6 A. Correct.

7 Q. Now, at 8 to 10 ERM's data shows it to
8 be reduced even further. ICON shows it to be
9 above, but there's some issues that the panel has
10 already heard about regarding differences between
11 the ERM data and the ICON data. But my point is
12 if it -- what this is showing us is that the
13 barium is not leaching or migrating down to the
14 shallow groundwater as your barium soil to
15 protection standard would suggest, is it, sir?

16 A. There's a lot of -- I think I just said
17 there's a lot of factors affecting the barium's
18 ability to enter the groundwater.

19 Q. So let's look --

20 A. I think the primary factor is the fact
21 that this is a confined aquifer. How do you --
22 it's hard to --

23 Q. You said confined or unconfined?

24 A. Confined. Confined and leaky, yeah. So
25 it's hard to contaminate.

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1 Q. Let's now look at -- and let's go to
2 Area 4.

3 MS. RENFROE: The next slide, please.

4 A. But, again, I just want to be clear.
5 You know, that's one point. Where I had a barium
6 concentration in the soil and in the groundwater
7 was at H-12. And there, the highest concentration
8 was in the 4- to 6-foot zone. So that's one
9 example, and here will be another one. But here's
10 another one.

11 Q. Right. My point is that here H-8 --
12 Area 4 at H-8 -- again, you calculated -- you and
13 ICON calculated a background level of 331, and
14 that's achieved by the 6- to 8-foot zone, isn't
15 it? Isn't it, sir?

16 A. Achieved -- I don't know what achieved
17 means but --

18 Q. Well, it falls below -- the ERM data
19 point falls -- shows that the barium is below the
20 ICON-calculated background level?

21 A. Well, certainly 268 is less than 331.

22 Q. And then by the time we get to the 10-
23 to 12-foot zone, both ICON and ERM show the barium
24 to be below the background level?

25 A. The math is clear.

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1 Q. Right. So what this is telling us --
2 and we can look at every one of the areas, but
3 what it's telling us is the soil to groundwater
4 protection standard that you calculated for barium
5 to protect the groundwater, the site data shows
6 that there is no threat to groundwater from
7 barium?

8 A. Did I say there was a threat to
9 groundwater from barium in the -- in my
10 conclusions?

11 Q. So are you telling this panel now that
12 there is no threat to groundwater --

13 A. Well, I just want to -- you're
14 representing that I've said something, and I
15 just --

16 Q. Sir, I'm just --

17 A. I'm not recalling it.

18 Q. Dr. Schuhmann, I'm going off of the
19 value that you calculated for your soil to
20 groundwater protection standard for barium. The
21 panel has it in your report, but the data -- the
22 site data shows there's no barium leaching to
23 shallow groundwater?

24 A. So the only place I talk about
25 groundwater in my conclusions is here. It says

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1 groundwater within plumes defining areas in which
2 the GW-2 is exceeded require remediation if the
3 land is to be for future residential use.
4 Somebody would be putting a well. If there's a
5 plume of water contaminated above the MCL and
6 somebody can drill a well into that contaminated
7 water, then that seems like a problem to me, and
8 it seems like it to RECAP as well.

9 However, if the land use is restricted
10 such that, for example, on-site groundwater is not
11 extracted and used for human consumption, then the
12 results from the Domenico model show that
13 Groundwater 2 will not be exceeded at the property
14 boundaries and remediation would not be required.

15 Q. So --

16 A. So I'm just -- so I just want to be
17 clear that in my conclusions I'm not -- I've
18 stated anything except the fact that this soil to
19 groundwater pathway is somehow affecting the
20 entire site.

21 Q. It's not. That's what you're saying?
22 It's not, is it?

23 A. Not the entire site. This is a
24 1200-acre site. It is.

25 Q. Right.

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1 A. It's affecting certain places. We can
2 see where there's contamination in the soil, and
3 there's contamination in the groundwater. And it
4 doesn't take a rocket scientist to sort of put
5 those two together, however, over the entire site?
6 No. No.

7 Q. Right. In fact --

8 A. There's some areas we see -- sorry.
9 There's some areas we see high concentrations of
10 barium in the soil and no barium in the
11 groundwater.

12 Q. In fact, the only place where we find
13 barium in the groundwater is at H-11, isn't it?

14 A. I don't know. I haven't studied it for
15 that but --

16 Q. Let's move on. We need to wrap up.

17 A. Yeah. Yeah.

18 Q. I'm going to move now to --

19 A. See, I think we agree on a lot of this.

20 Q. I think we're going to move on to your
21 groundwater classification evaluation. Okay?

22 A. Okay.

23 Q. And I'm shifting now --

24 A. All right.

25 Q. -- in the --

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1 A. Shift away.

2 Q. -- hope of getting finished.

3 A. Yeah. This is what we do, I think.

4 Q. So there's no evidence, sir, that the
5 shallow groundwater beneath the Henning property
6 has ever been used that you are aware of?

7 A. Well, no. I have no knowledge and no
8 opinion on that.

9 Q. And you're not aware --

10 A. That's outside my area --

11 Q. Sorry.

12 A. -- of understanding.

13 Q. Pardon me.

14 You're not aware of any drinking water
15 wells in that shallow groundwater, are you, sir?

16 A. In the shallow groundwater on the site?
17 No. That's related to the other question. I have
18 no knowledge.

19 Q. There was a reference in your report to
20 multiple drinking water wells in the shallow
21 ground water. I think you corrected that at your
22 deposition, but because the panel has your
23 report --

24 A. Yeah. Let's make sure it's clear.

25 Q. -- let's be clear.

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1 A. Yeah.

2 Q. There's no -- there are no drinking
3 water wells in that shallow groundwater today?

4 A. Not to my knowledge, and I think in my
5 report it was unartfully -- the sentence was
6 unartfully crafted. Ms. Renfroe was kind enough
7 to point it out to me, and I was talking about
8 potential future wells associated with a
9 residential -- potential future residential
10 subdivision.

11 Q. And you're not aware of any specific
12 plans to install a drinking water well in that
13 shallow groundwater aquifer, are you?

14 A. That's outside my knowledge sphere.

15 Q. And you know, though, that the Chicot is
16 a potable aquifer and water source for the
17 property, don't you?

18 A. No, I don't know that. I mean, I know
19 the Chicot exists, and it's exploited in Houston
20 and the Evangeline underneath the Chicot. But --
21 so the Chicot is there.

22 Q. All right.

23 A. Yeah.

24 Q. Now, you classified the shallow
25 groundwater at this site as Class 2; correct?

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1 A. That's correct.

2 Q. And you did so by doing your own RECAP
3 evaluation or your own classification analysis
4 under RECAP?

5 A. Well, I messed around -- and we talked
6 about this in my deposition and I provided,
7 pursuant to the subpoena request, my spreadsheet
8 where I still had some of my work on a second
9 sheet. There were two worksheets on there, and I
10 was playing around with the data, looking at how
11 ICON calculated the well yield and comparing it
12 with ERM's method.

13 And I was using the data I had and
14 looking at both methods because they're two
15 different methods, and I tried to see a method to
16 get inside other people's shoes -- to see a method
17 where that well yield would get below 800 gallons
18 per day. And I just couldn't do it no matter if I
19 took the geometric mean of this or the average of
20 this or the geometric mean of the well yield
21 versus the geometric mean of the hydraulic
22 conductivity. I just quite simply couldn't get
23 the well yield under -- below the point where this
24 wouldn't be a GW-2.

25 Q. So you used the geometric mean of the

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1 yield from four wells; correct?

2 A. Just like ERM did.

3 Q. So --

4 A. Well, ERM used the geometric mean of the
5 well yields, which is not the correct way to do
6 it, but I did it like that because you get a lower
7 number.

8 Q. So just let's take it a step at a time.

9 A. Sure.

10 Q. If you could stay focused on my discrete
11 question.

12 A. All right. I'm going to try.

13 Q. You used four wells and --

14 A. I believe that's true, right.

15 Q. And you say you just couldn't get the
16 yield below 800 gallons but -- now, you did not
17 include ICON's H-27 location in your analysis, did
18 you, sir?

19 A. No, of course not.

20 Q. And --

21 A. Why would I?

22 Q. And you did not consider the slug
23 testing data collected by ERM, did you, sir?

24 A. No. I've subsequently looked at ERM's
25 data, and it's still -- it still comes out above

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1 800 gallons per day, but it was improper for me to
2 use H-27. That's why I excluded it.

3 Q. But ERM used slug test data for 17 wells
4 to characterize the yield. You used data for four
5 wells to characterize the yield; correct?

6 A. I used all of ICON's data, but then I've
7 gone back subsequently. And I've looked at all of
8 ERM's data, all of their wells, and I've
9 calculated the well yield actually doing the
10 geometric mean of the hydraulic conductivity,
11 which is what RECAP calls for and which makes
12 sense because we get -- geometric mean helps us
13 get better averaging over a spatial domain, and
14 with excluding single slug test wells -- because
15 the EPA forbids you from using a single slug test
16 with which to calculate a hydraulic conductivity.
17 So you have to kick out -- so I -- I couldn't use
18 H-27 because all I had was one slug test from
19 H-27. So that's what Ms. Renfroe is talking
20 about. But, also, in the ERM data, I think
21 there's only -- if my memory is right, there's
22 only one slug test for MW-5. So if I look at
23 ERM's data and I kick out MW-5 because there's
24 only one slug test -- and the EPA says if there's
25 only one slug test result, you cannot use it to

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1 calculate a hydraulic conductivity. Then I still
2 get -- and then I do the calculation correctly.
3 Take the geometric mean of the hydraulic
4 conductivity, calculate the well yield. ERM's
5 slug tests show that the yield is above
6 800 gallons per day.

7 Q. I'm moving to another question now --

8 A. Okay.

9 Q. -- for your benefit.

10 You and I talked at your deposition, and
11 you told me that you thought the groundwater --
12 the shallow groundwater beneath the property was
13 inhomogenous. Do you recall that, sir?

14 A. Well, I would say the aquifer and
15 certainly the porous media is inhomogeneous, yes.

16 Q. Right. And meaning it's widely
17 different?

18 A. It just means it's not the same.

19 Q. Not the same.

20 A. It doesn't mean it's widely different.

21 Q. We can agree on that. Not the same?

22 A. Yeah. And I think I told you that corny
23 joke from when I was at the University of Houston
24 then. I don't need to tell you the joke?

25 Q. For the sake of time, you might save the

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1 panel from that.

2 A. It's a good one, I'll tell you that.

3 Q. Okay.

4 MR. CARMOUCHE: We might need it, Judge.

5 THE WITNESS: I think it's good. My
6 students --

7 MS. RENFROE: Don't want to deprive them of a
8 corny joke but --

9 THE WITNESS: The students appreciated it as
10 well.

11 BY MS. RENFROE:

12 Q. But can --

13 A. Sorry.

14 Q. Can we agree -- or let me ask the
15 question this way: You did agree with me in your
16 deposition, did you not, that you cannot evaluate
17 groundwater at a property or a site as big as this
18 1200-acre property based on a single point? Do
19 you remember telling me that?

20 A. Well, you --

21 Q. The question is: Do you remember
22 telling me that?

23 A. You can't characterize an entire site.
24 So -- based upon one well. I wouldn't want to do
25 that for a 1200-acre site. Put one well in -- I

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1 mean, the EPA says you can't use a slug test from
2 one well to even determine the hydraulic
3 conductivity at that well, but if you determine
4 that one well -- that you've got a well yield
5 of -- I don't know -- 5,000 -- some of these wells
6 have yields of 5,000 gallons per day. My well at
7 my house in Maine -- I'm off town water and
8 sewage. I'm all alone out there, and I'm less
9 than 3,000 gallons per day. So there's -- there
10 are wells that are producing twice the water that
11 I live on at my house. So to me that aquifer
12 doesn't look like some poor little aquifer that
13 can't supply homes. There's more water available
14 in that aquifer than I have coming out of my well.

15 Q. At page 188 I asked you the question at
16 line 13: "You'd agree with me that because of the
17 disparity, you can't evaluate statewide
18 groundwater sitewide" -- excuse me -- "sitewide
19 groundwater based on a single point?" Your answer
20 was: "Can't. No. No. Especially a site of this
21 magnitude."

22 A. That's just what I just said today.

23 Q. That's your sworn testimony?

24 A. Good.

25 Q. Now, you're aware, sir, that Mr. Miller,

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1 under oath, told this panel yesterday that you
2 could classify the shallow groundwater based on a
3 single well?

4 MR. CARMOUCHE: Just for the record, I object
5 to the form and mischaracterization. Subject
6 to that, I'm --

7 JUDGE PERRAULT: Okay.

8 A. Yeah. I think there's something written
9 in RECAP that speaks to this. So I'm talking as a
10 form- -- a geologist and an environmental
11 engineer. I think there's a legal definition
12 that's embedded somewhere in RECAP that
13 Ms. Renfroe is getting to. So -- but I don't want
14 to put words in her mouth or tell you what she's
15 doing, but I think that's -- what you're getting
16 to is the definitions in RECAP, is that -- I think
17 that's what -- yeah.

18 BY MS. RENFROE:

19 Q. So Mr. Miller says one well is enough;
20 you say it's not enough. Which one of you is
21 right?

22 Which one of you is wrong actually,
23 Dr. Schuhmann?

24 A. Well, I would defer -- I would always
25 defer to Mr. Miller about site-specific issues,

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1 but if you put a well in and you're able to
2 produce water at that well, then that's a useable
3 aquifer right there. But I don't know if it tells
4 you -- if somehow that tells you that, a mile away
5 or 5 miles away, that you'll be able to exploit
6 water there. I just -- I don't necessarily see
7 that.

8 Q. All right. Last question. Going back
9 to your conclusion in your RECAP evaluation -- I
10 really don't want to put any words in your mouth.
11 I just want to understand what you're telling this
12 panel. You said 37 -- taking into account
13 overlapping AOIs, 37.7 total acres of soil require
14 remediation for barium and/or arsenic in excess of
15 the MO-2 standard. Do you see that, sir?

16 A. Yes.

17 Q. Now, do you stand by that today in front
18 of this panel, or are you retreating from that
19 statement?

20 A. I never intended to direct remediation
21 with this scoping analysis. What this -- and
22 perhaps it's unartfully written or perhaps the
23 intent of this report was not as explicitly -- I
24 didn't make it as explicitly as I should, but
25 based upon the calculations -- if you crank the

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1 handle, this is at the level of the RECAP
2 evaluation that I performed. This is what
3 emerges.

4 It would cause you to ask questions
5 certainly about the arsenic, and I was proactive
6 in that in my deposition. I offered that. I said
7 this is -- this informs us about what emerges from
8 the RECAP evaluation but then you have to use your
9 brain and say what does this mean? What is this
10 telling me? And if it's telling us that we need
11 to remediate the soil to below background, then
12 this is no longer valid. And that's exactly what
13 it says; however, this is what emerges from a
14 RECAP evaluation.

15 Q. When you were pointing and saying this
16 is no longer valid, you were pointing to your
17 Section 4 conclusions in your RECAP evaluation
18 report?

19 A. No. I was pointing to the arsenic.
20 We're back on arsenic again, and I don't know how
21 else to say it, is that you can take the arsenic
22 off the table. There's a few points out there
23 that are in excess of the site -- the
24 site-specific background. I think there's four
25 specific borings where it was in excess but not

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1 all that excessive.

2 Q. So --

3 A. Okay.

4 Q. So we'll take that off the table, and
5 then to wrap up, you said 37.7 acres needed to be
6 remediated to protect human health. Did you know
7 that ICON proposes remediation of approximately
8 1 acre for 29-B agronomic standards and nothing
9 for human health? Were you aware of that, sir?

10 A. No.

11 Q. And did you know that ICON is not
12 proposing any soil remediation for human health
13 purposes? Were you aware of that?

14 A. No.

15 Q. In fact, did you know that ICON's only
16 remediation proposal for barium in the -- is to a
17 standard that will protect ducks, not people?
18 Were you aware of that?

19 A. No.

20 MS. RENFROE: Thank you, sir. I appreciate
21 your patience with me. Those are all the
22 questions I have.

23 THE WITNESS: Thank you.

24 MR. CARMOUCHE: If you don't mind, 15
25 minutes. If we don't finish...

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1 JUDGE PERRAULT: Any objection from our
2 panel?

3 Please proceed with your redirect.

4 REDIRECT EXAMINATION

5 BY MR. CARMOUCHE:

6 Q. Let's go directly to that question.
7 Mr. Sills is going to testify. There's -- and you
8 know this, that there's a contingency plan that
9 ICON has because Mr. Sills and Mr. Miller have --
10 Mr. Miller has testified that there was a concern
11 because there wasn't a 29-B barium parameter. So
12 they suggested a contingency plan and not
13 recommended it today --

14 MS. RENFROE: Your Honor, I'm going to object
15 to Mr. Carmouche just testifying himself.
16 There's no question pending, and he's talking
17 about testimony that hasn't been offered yet.

18 JUDGE PERRAULT: All right. Restrict
19 yourself to questioning, please.

20 MR. CARMOUCHE: Is there a -- well, first,
21 this is an expert, and I can lead the expert.

22 JUDGE PERRAULT: Right. You can lead him,
23 but just --

24 MS. RENFROE: But he can't testify.

25 BY MR. CARMOUCHE:

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1 Q. Are you aware of a contingency plan?

2 A. Yes. I am aware of a contingency plan
3 for barium.

4 Q. Are you aware that that's not being
5 proposed that it should be done right now?

6 A. Could you restate that question?

7 Q. Are you aware that that contingency plan
8 is not being proposed to be done right now?

9 A. Yes. Yes, I am.

10 Q. And Mr. Sills can testify to his
11 opinion, but as we sit here today, you have
12 concerns as a risk assessor as to the soil that
13 contains barium?

14 A. In some restricted places, yes.

15 Q. And what you're saying today, for the
16 protection of the future of this property, that a
17 future -- that an additional analysis should be
18 performed?

19 A. It would be prudent, and RECAP says
20 either you remediate or you move to the next
21 management option. And, again, because of the
22 nature of this site where it's a leaky aquifer,
23 especially for this soil to groundwater pathway, I
24 think an MO-3 is really appropriate because the
25 conceptual model that we're using with the Summers

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1 dilution factor is not reflective of the reality
2 at this site. And, again -- I used it. So I
3 performed calculations here that I know are not
4 reflective of the site, but I did that in order to
5 contrast it with ERM's report and also to see what
6 emerges from a RECAP analysis, that sometimes what
7 comes out is not necessarily reflective of what's
8 happening at the site.

9 Q. Ms. Renfroe questioned you a lot, and a
10 lot of witnesses have been questioned about your
11 experience testifying in front of this panel
12 dealing with DEQ.

13 Did testifying in front of this panel
14 make you any smarter today? You still have the
15 same background; right? The same experience?

16 A. I don't know, Mr. Carmouche. I always
17 learn from Ms. Renfroe, and I appreciate her.

18 Q. This is your first time.

19 A. Yeah.

20 Q. And you haven't worked -- I mean,
21 Ms. Levert's worked -- she's testified. You
22 haven't worked for me for 20 years; right?

23 A. No. I haven't worked for anybody for
24 20 years.

25 Q. I mean, I called you because -- I asked

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1 you because, hey, I was concerned because of ICON,
2 and I asked you to look at this to determine if
3 the proper risk assessment was done. Isn't that
4 what I called you for?

5 A. That's what you did.

6 Q. And going to the arsenic and barium. I
7 don't know if you heard Mr. Miller, or if you
8 didn't, tell me. But Mr. Miller is of the opinion
9 that we really have -- we don't know the extent
10 and more sampling should be done to determine
11 background. Did you hear that?

12 A. No. I didn't hear that, but I really
13 agree with it. And there's -- well, yeah. I'll
14 stop there.

15 Q. Regarding pica, it's upon experts like
16 yourself to determine what's the potential risk
17 and exposure of a specific site. That's your job?

18 A. Yes.

19 Q. And default and all the stuff she went
20 through in RECAP and EPA -- it's not -- it's my
21 appreciation you -- correct me if I'm wrong --
22 that these regulatory agencies rely upon
23 companies, polluters, responsible parties to
24 voluntarily -- I mean, you, as an expert, can
25 voluntarily say that: "I see an issue or a

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1 potential issue, so I think we ought to do
2 analysis." That's what you do for a living?

3 A. That's correct.

4 Q. That's what risk assessors do for a
5 living?

6 A. That's correct.

7 Q. And so RECAP's default or not -- there's
8 a -- pica exists in the world of science. I mean,
9 there's regulations about it. RECAP has a
10 section; correct?

11 A. Correct.

12 Q. EPA has a section; correct?

13 A. Extensive sections on it, yeah.

14 Q. And you, as a responsible scientist, are
15 saying -- simply saying to this panel that more
16 analysis and risk assessments need to be done to
17 make sure that this population is protected?
18 That's all you're saying; correct?

19 A. Yeah. You can't go backwards. This is
20 the time to really be prudent and to figure out
21 what's going on out there because you can't go
22 backwards.

23 Q. And, lastly, I want to ask you about the
24 data because I want to make it very clear.

25 Regarding the -- I'll just show you. And a lot of

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1 words on it.

2 But the only data that was involved in
3 your site-specific dilution factor that you
4 testified today was Ms. Levert's barium
5 concentration at her AOIs?

6 A. Those are the highest concentrations of
7 barium within each of the ERM AOIs, yes.

8 Q. That's ERM's data. All of this talk
9 about you used ICON, you used this. This is ERM's
10 data; correct?

11 A. The SPLP data, it belongs to --

12 Q. That you used; correct?

13 A. -- ERM. Right. All the whole bottom
14 line there that we're comparing, the SPLP
15 barium -- all of that -- those tests were
16 performed by ERM, yeah.

17 Q. And you used ERM's hydrologic
18 conductivity?

19 A. I did. I checked their
20 hydro-conductivity to calculate a well yield based
21 upon their wells.

22 Q. And hydrologic data regarding this?

23 A. Oh, yeah. Yes. Of course.

24 Q. Regarding this right here?

25 A. Yes. That right there, yes.

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1 Q. Right there?

2 A. Yes.

3 Q. All of this is ERM's data?

4 A. Correct.

5 MR. CARMOUCHE: Thank you, sir. That's all
6 the questions I have.

7 MS. RENFROE: Your Honor, can I follow up
8 with -- on one point that is now very
9 confused?

10 JUDGE PERRAULT: Okay. Go ahead.

11 MS. RENFROE: Thank you.

12 MR. CARMOUCHE: I would ask for the
13 opportunity --

14 JUDGE PERRAULT: Yeah. We're going for a
15 full disclosure of the facts.

16 MS. RENFROE: I understand.

17 RE-CROSS-EXAMINATION

18 BY MS. RENFROE:

19 Q. To be clear though, the 1200 data
20 points -- sampling data analyses that ERM
21 collected, you told me at the beginning of this
22 morning you did not incorporate that into your
23 RECAP evaluation, did you, sir?

24 A. But Mr. Carmouche just asked me about
25 those specific data points that were SPLP data

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1 but -- so the -- you're -- I'm not sure where this
2 is coming from if you thought that was --

3 Q. I want to make sure --

4 A. But I'll agree with you that, yes, I --
5 while I used some ERM hydraulic data to look at
6 well yield with respect to analytical data -- I'm
7 just being careful now to make sure I didn't use
8 any -- I can't recall using any of their
9 analytical data except for the SPLP results --

10 Q. Thank you.

11 A. -- which are pretty important.

12 MS. RENFROE: Thank you.

13 JUDGE PERRAULT: You may follow up on the
14 point she just raised.

15 REDIRECT EXAMINATION

16 BY MR. CARMOUCHE:

17 Q. Your two opinions today had nothing to
18 do with some RECAP MO-2 evaluation; correct?

19 A. Correct.

20 Q. What you told -- go ahead.

21 A. I mean, the -- what emerges from a pica
22 analysis -- that was an MO-2-level analysis, so
23 when you feed a pica ingestion rate into an MO-2
24 analysis, then an MO-2 RECAP standard emerges and
25 the default -- the DF Summers is not an MO-2.

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1 That's a screening option.

2 Q. So the information you went today
3 through in detail to say that Ms. Levert did it
4 wrong, it's ERM's data? This chart right here is
5 ERM's data?

6 A. Yes. It's more the method by which you
7 determine the RECAP standard with which to examine
8 ERM's data.

9 Q. Correct.

10 A. Yes.

11 Q. The ERM's data?

12 A. Yes.

13 MR. CARMOUCHE: Thank you, sir.

14 MS. RENFROE: Your Honor, may I hand to
15 the -- no. I don't have any more questions.
16 I want to hand to the panel and to the Court
17 the slides that I used.

18 JUDGE PERRAULT: Right. Well, that's what I
19 want to go through. No one offered any
20 exhibits during his testimony. So I want to
21 know if there are exhibits that should --
22 that both sides are offering.

23 We'll start with Henning.

24 MR. WIMBERLEY: Yes, Your Honor. I have the
25 exhibits here that I'd like to offer with

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1 respect to Mr. Schuhmann's testimony. These
2 are the studies he referenced in the slide
3 show.

4 JUDGE PERRAULT: What are the exhibit
5 numbers?

6 MS. RENFROE: May I look over your shoulder?
7 Do you mind --

8 MR. WIMBERLEY: Sure. No problem.

9 Exhibit LL is the '96 Prevalence of Pica
10 paper. Exhibit MM is the 1973 Prevention of
11 Pica, the Major cause of Lead Poisoning in
12 Children paper. Exhibit PP is the 1993 Soil
13 Pica, Not a Rare Event paper. Exhibit QQ is
14 a 1996 EPA Soil Screening Guidance User
15 Guide. Exhibit UU is a 2000 Pica Commonly
16 Missed paper.

17 JUDGE PERRAULT: What is UU?

18 MR. WIMBERLEY: Pica: Common but Commonly
19 Missed paper. It's a research paper.

20 Exhibit XX, an update on pica prevalence
21 contribution -- or contributing causes and
22 treatment. Exhibit EEE, 2017 U.S. EPA update
23 for Chapter 5 of the Exposure Factors
24 Handbook. Exhibit FF, a 2018 ATSDR Exposure
25 Dose Guidance for Soil and Sediment

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1 Ingestion.

2 MR. BRYANT: That's FFF?

3 MS. RENFROE: Right. FFF.

4 MR. WIMBERLEY: I'm sorry. What did I say?

5 MS. RENFROE: FF. That's all right.

6 JUDGE PERRAULT: Well, there's three Fs?

7 MR. WIMBERLEY: Three Fs. Sorry about that.

8 JUDGE PERRAULT: Thank y'all for catching
9 that.

10 And what is three Fs?

11 MR. WIMBERLEY: The 2018 ATSDR Exposures Dose
12 Guidance for Soil and Sediment Ingestion.

13 Exhibit -- four Bs, BBBB. That's just
14 RECAP 2003.

15 JUDGE PERRAULT: 2003 RECAP.

16 MR. WIMBERLEY: Yes, sir. And Exhibit EEEE.

17 JUDGE PERRAULT: Whoa, whoa, whoa. E --

18 MR. WIMBERLEY: Four Es.

19 JUDGE PERRAULT: All right. Four Es.

20 MR. WIMBERLEY: Pica, a Survey of Historical
21 Literature as well as reports from the Field
22 of Veterinary Medicine Anthropology, the
23 Present Study of Pica in Young Children and a
24 discussion of its pediatric and psychological
25 implications.

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1 JUDGE PERRAULT: All right.

2 MR. WIMBERLEY: A long title.

3 THE WITNESS: That's the book.

4 MS. RENFROE: No objections to those
5 exhibits, Your Honor.

6 JUDGE PERRAULT: No objections to
7 Exhibits LL, MM, PP, QQ, UU, XX, EEE, FFF,
8 BBBB, EEEE. So all exhibits are admitted
9 without objection. Okay.

10 And, now, does Chevron have exhibits?

11 MS. RENFROE: Do you have anything else?

12 MR. WIMBERLEY: No, ma'am.

13 MS. RENFROE: Okay. I only want to offer the
14 slides that I used on cross-examination.

15 JUDGE PERRAULT: The slides? We've got to
16 give them a number of some sort.

17 MR. CARMOUCHE: Judge, I'm going to object.
18 It's not on --

19 JUDGE PERRAULT: Well, let me get this
20 straight first.

21 MS. RENFROE: 158.5, Chevron Exhibit 158.5.

22 JUDGE PERRAULT: 158.5. And how many slides
23 are we talking about?

24 MS. RENFROE: Twelve.

25 JUDGE PERRAULT: Twelve slides.

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1 MS. RENFROE: May I hand those up to
2 Your Honor and the panel?

3 JUDGE PERRAULT: Yes, please.

4 Hold on. Now we have an objection. Go
5 ahead.

6 MR. CARMOUCHE: Judge, I want to object.
7 It's not on their exhibit list, and I thought
8 we had discussions. So if we're going -- if
9 she's going to be allowed to introduce slides
10 that are not on the exhibit list and the
11 panel gets to look at them, then I would
12 have -- I would like the opportunity to
13 introduce all my slides that are not on my
14 exhibit list.

15 MS. RENFROE: Your Honor, I'm -- I'll
16 withdraw. I just want to hand them out to
17 you and the panel.

18 JUDGE PERRAULT: We can't hand them out if
19 we're not going to use them as exhibits.

20 MS. RENFROE: Well, they've all --
21 everybody's have been handed out.

22 MR. CARMOUCHE: This is what you -- your
23 slides -- you used in...

24 MS. RENFROE: On cross-examination.

25 MR. CARMOUCHE: No. With Levert. No. Have

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1 these slides been shown?

2 MS. RENFROE: Yeah. They were just shown --

3 MR. CARMOUCHE: By your other witnesses?

4 MS. RENFROE: I don't understand your
5 question.

6 MR. CARMOUCHE: Well, in your case in chief,
7 did -- were your witnesses shown these
8 documents?

9 MS. RENFROE: I don't know, and I don't know
10 that that matters.

11 MR. CARMOUCHE: Well, I'm objecting.

12 MR. WIMBERLEY: And I don't think you've used
13 all these slides today.

14 MR. GREGOIRE: If I might add, Judge, I think
15 these slides were beneficial to the panel in
16 arriving at their ultimate decision. There's
17 nothing that --

18 JUDGE PERRAULT: Let me see --

19 MR. GREGOIRE: Nothing against reviewing them
20 as any other slides --

21 JUDGE PERRAULT: Well, I'm going to treat
22 everyone the same. So if they get slides,
23 you get slides, but I can't just hand them
24 stuff that's not in evidence because, you
25 know, what am going to send the court? It's

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1 all got to be -- it's either in evidence or
2 it's not.

3 And I know, you know, we're using these
4 slides for the presentations. So I would
5 think we should put them in evidence since
6 they've been used, and it will help the panel
7 in making their decision when they're
8 considering the witnesses' testimony.

9 MS. RENFROE: Then that's fine with us,
10 Your Honor.

11 MR. CARMOUCHE: And that's fine with me as
12 long as I get to introduce my slides.

13 JUDGE PERRAULT: Whatever I do for one, we're
14 going to do for the other. We're going to
15 treat everyone fairly, and, look, we're
16 looking for a full disclosure of the facts
17 under the APA. That's what we're going for.

18 MR. CARMOUCHE: All for it. Is it okay, Your
19 Honor, if I --

20 JUDGE PERRAULT: We have 12 slides from
21 Chevron listed as Exhibit 158.5. Is there an
22 objection?

23 MR. CARMOUCHE: There is an objection.

24 JUDGE PERRAULT: Subject to me allowing you
25 to do the same.

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1 MR. CARMOUCHE: Subject to me -- and not on
2 the time frame because I don't have it right
3 now.

4 JUDGE PERRAULT: But I will allow you to do
5 the same. If y'all are using slides with
6 your experts and no one objects to the
7 slides, you know, during the testimony, then
8 I'm going to let you put it in because it
9 makes no sense not to. So --

10 MR. CARMOUCHE: Okay.

11 JUDGE PERRAULT: So that's what we're going
12 to do. So Exhibit 158.5 is admitted into
13 evidence, and I'm sure the panel is happy
14 about it because now they get to review these
15 things in making your decisions. 158.5 --

16 MR. WIMBERLEY: And, Your Honor, I would
17 offer, file, and introduce the slides that we
18 used with Dr. Schuhmann.

19 JUDGE PERRAULT: All right. Let's see those.
20 Has the other side seen them? Because
21 there's some --

22 MS. RENFROE: Yes, we have.

23 JUDGE PERRAULT: And what do you want to
24 label these?

25 MR. CARMOUCHE: Four Ws.

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1 JUDGE PERRAULT: Henning four Ws. And how
2 many slides are these?

3 MR. WIMBERLEY: Twenty-five.

4 JUDGE PERRAULT: Twenty-five slides. All
5 right. WWW in globo, 25 slides. Any
6 objection to WWW?

7 MS. RENFROE: No, Your Honor.

8 JUDGE PERRAULT: No objection. So ordered.
9 It shall be admitted.

10 MR. BRYANT: Your Honor, if it's all right
11 with you, we'll bring copies of all of our
12 slides that we presented with our witnesses
13 in our case in chief on Monday morning.
14 We'll identify those and offer those into
15 evidence.

16 JUDGE PERRAULT: Good. That's what we'll do.
17 And, remember, at the end we're going to get
18 together, both sides, with our Clerk of
19 Court, and we're going to go over all this
20 stuff to make sure we have one copy of
21 everything that's been admitted into
22 evidence. And we're going to have four books
23 for them, one book for the District Court,
24 and then if y'all want to put all of your
25 evidence on a -- I forget. What do we call

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1 these doohickeys? Flash drive. We'll give
2 them one flash drive, and we'll have one
3 flash drive for the court. So two flash
4 drives because I don't know what the court
5 would prefer, but I want to give them both.

6 MS. RENFROE: Good enough.

7 JUDGE PERRAULT: And I don't know what
8 they're going to prefer, but they might like
9 one flash drive that they can share or those
10 books.

11 PANELIST DELMAR: A flash drive. We much
12 prefer less paper in our office.

13 JUDGE PERRAULT: So y'all would prefer a
14 flash drive rather than the books?

15 PANELIST DELMAR: Yes.

16 JUDGE PERRAULT: Can we give them four flash
17 drives?

18 MS. RENFROE: We can.

19 JUDGE PERRAULT: We'll do that. We won't
20 tear up a bunch of trees.

21 MR. CARMOUCHE: Your Honor, since we're
22 talking about it -- and the books I think we
23 both gave probably contain a lot of paper
24 that's not going to be exhibits. So rather
25 than destroy more trees, I think it's prudent

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1 for us to take the boxes back.

2 MS. RENFROE: We didn't give them hard
3 copies.

4 MR. CARMOUCHE: If we did. I thought --
5 yeah. Because I thought we were required to
6 give them photocopies.

7 (Discussion off record.)

8 PANELIST OLIVIER: We can give one hard copy
9 with whatever, yes.

10 JUDGE PERRAULT: So we'll have one hard copy
11 for the court, and one hard copy for them.

12 And then you would prefer four flash drives?

13 And I'll need one flash drive for the court.

14 MR. CARMOUCHE: And we'll need --

15 JUDGE PERRAULT: You can take all your stuff
16 back.

17 MR. CARMOUCHE: -- that back because that has
18 all of it, and we can narrow it down.

19 JUDGE PERRAULT: Yeah. We just need two.

20 One for the court and one for them. Okay.

21 And then we'll give them four flash drives,
22 and we'll give the court one flash drive.

23 And we're going to get together -- whenever
24 we're done, we're going to get together and
25 make an appointment, and I'll have Mr. Rice

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1 come for DNR, whoever y'all want to bring,
2 and we'll have our Clerk of Court. And we'll
3 get -- make sure we have it perfect so that
4 there are no problems.

5 MS. RENFROE: Thank you.

6 MR. WIMBERLEY: Thank you, Your Honor.

7 MR. CARMOUCHE: Thank you, Your Honor.

8 JUDGE PERRAULT: Okay. And state your name
9 for the record.

10 MR. RICE: Jonathan Rice, Office of
11 Conservation counsel.

12 Just to clear something up, I've heard
13 where there has been exhibits -- like, there
14 have been PowerPoint presentations, and then
15 there's been things put on the overhead. Are
16 all of those considered exhibits, and for,
17 you know, some of the people on Zoom -- I
18 mean, they're not getting the -- some of the
19 things that are on PowerPoint -- I mean, the
20 overhead. So I'm just --

21 JUDGE PERRAULT: The overhead, I think
22 they're showing what are exhibits, and then
23 on the PowerPoint -- those are what they've
24 been using for their witness's display or --
25 and now we're turning the PowerPoints into

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1 exhibits. And what I think they were using
2 on the overhead were already exhibits.

3 MR. RICE: Okay.

4 MR. CARMOUCHE: If not, they were on the
5 slides, which are now going to be exhibits.

6 MR. RICE: Okay. Great.

7 JUDGE PERRAULT: Well, all of that's going to
8 go into the record for the panel and then for
9 the court.

10 Anyone have any complaints or problems
11 right now?

12 PANELIST OLIVIER: If could --

13 JUDGE PERRAULT: Yes, sir.

14 PANELIST OLIVIER: Could we take maybe just a
15 five-minute break real quick and come back
16 just to collaborate if we have any questions?

17 JUDGE PERRAULT: All right.

18 Y'all want to do it after lunch, or do
19 you want to do it now?

20 PANELIST OLIVIER: We can do it after lunch
21 if you all are okay with --

22 JUDGE PERRAULT: So do you want to do it now?

23 MR. CARMOUCHE: I mean, he's -- yes.

24 JUDGE PERRAULT: Let's take a five-minute
25 break, and you -- I'm going to put you in

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1 your room, and then you can ask questions.

2 (Recess taken at 12:18 p.m. Back on
3 record at 12:26 p.m.)

4 JUDGE PERRAULT: We're back on the record.
5 Today's date is February 10th, 2023. It's
6 now 12:26.

7 The panel has no questions for this
8 witness?

9 PANELIST DELMAR: That's correct.

10 PANELIST OLIVIER: Correct.

11 JUDGE PERRAULT: We're ready for lunch.
12 Let's come back -- so it's almost 12:30.
13 We'll come back for 1:30.

14 We're in recess.

15 (Lunch recess taken at 12:26 p.m. Back on
16 record at 1:32 p.m.)

17 JUDGE PERRAULT: We're back on the record.
18 It's February 10th, 2023. It's now 1:32.
19 We're back on the record.

20 And Henning can call its next witness.

21 (Discussion off record.)

22 JUDGE PERRAULT: We're back on the record.
23 Counsel, call your next witness.

24 MR. KEATING: Yes, Your Honor. I'm Matt
25 Keating for Henning. We call Jason Sills.

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1 JUDGE PERRAULT: Would you state your name
2 for the record?

3 THE WITNESS: Jason Scott Sills.

4 JUDGE PERRAULT: And spell your last name.

5 THE WITNESS: S-I-L-L-S.

6 JASON SILLS,
7 having been first duly sworn, was examined and
8 testified as follows:

9 MR. KEATING: I've got Mr. Sills' slide show
10 here. We previously provided copies to
11 counsel for Chevron. They weren't in -- and
12 provided copies to the panel and to the
13 court.

14 DIRECT EXAMINATION

15 BY MR. KEATING:

16 Q. Mr. Sills, can you please introduce
17 yourself to the panel?

18 A. My name is Jason Sills. I'm originally
19 from Mississippi, hence the accent. It's gotten a
20 little bit better since I've been down here. I
21 graduated from LSU in 2000 with a degree in
22 environmental engineering, at which time -- after
23 I graduated, I went and worked for a company
24 called Southern Environmental Management
25 Specialties, or SEMS. Our primary work was site

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1 investigation, remediation, risk assessment at
2 underground storage tank sites, chemical
3 facilities, refineries. I did Phase 1, Phase 2s
4 for them. Some of the remediations that we did
5 was in-situ chemical oxidation with treating of
6 hydrocarbons. I also did pump and treat, both
7 with pumps and dual-phase, soil excavation. I've
8 worked in Texas, Louisiana, Arkansas, Tennessee,
9 Mississippi, Alabama, a little bit in Georgia. So
10 I've been all over the southeast in 23 years.

11 I worked with them until 2009, at which
12 time I started at ICON, which I'm currently
13 employed at. I'm the vice president for ICON. In
14 2009 I still did the UST work but got into legacy,
15 where I started dealing with 29-B. While at ICON,
16 we still perform soil excavation, groundwater
17 remediation. So I've got a pretty vast experience
18 dealing with RECAP since pretty much its
19 inception. A few of the sites that I had at SEMS
20 when I first started out was what they called old
21 matrix standards. I still remember that, where it
22 was five parts per million benzene. BTEX is what
23 you had to clean up too. That was before RECAP.
24 And then started working with RECAP in 2003, and
25 I've been working with that ever since.

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1 Q. Thank you for that.

2 MR. KEATING: I told Mr. Sills to try to give
3 you as much as possible without me feeding
4 him all the little questions for that part so
5 we could be a little more efficient.

6 BY MR. KEATING:

7 Q. Mr. Sills, just to kind of pluck a
8 little bit out of that, when you worked at SEMS
9 from 2000 to 2009, you were doing assessment and
10 remediation at UST and chemical plant sites
11 applying RECAP; right?

12 A. That's correct.

13 Q. Because that's the standard that applies
14 to those sites; right?

15 A. That's correct.

16 Q. And then from 2009 to present working at
17 ICON, you've been doing site assessment and
18 remediation at UST and oil field sites like this
19 one; right?

20 A. That's correct.

21 Q. And in doing that work at oil field
22 sites since -- you've been at ICON for what?
23 Fourteen, fifteen years? You've been -- you've
24 interpreted and applied both 29-B and RECAP for
25 those oil field sites; right?

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1 A. That's correct.

2 Q. Okay. Over the course of your career
3 since roughly 2000, about how many site
4 assessments have you done?

5 A. Several hundred. To be honest I lose
6 count, but it's way up there.

7 Q. Okay. And of that number -- of that
8 several hundred site assessments that you've done,
9 how many of those included both soil and
10 groundwater?

11 A. It's probably 80, 90 percent. It's very
12 rare that we go to a site that we don't encounter
13 both soil and groundwater.

14 Q. And when you worked at SEMS from 2000 to
15 2009, did you do actual remediation work on sites?

16 A. Yes, we did.

17 Q. Approximately how many sites did you
18 actually design a remediation plan for while you
19 were working at SEMS?

20 A. I probably designed and implemented 40
21 to 50, maybe north of 50. It was a lot that we
22 had. We had pretty large UST clients at SEMS, and
23 so they had sites all over the southeast. So we
24 were pretty busy.

25 Q. And those 40 to 50, maybe north of 50

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1 sites where you participated in designing a
2 remediation plan for while you were at SEMS, how
3 many of those involved actually going out and
4 doing the remediation work that you designed?

5 A. Pretty much all of them. That's what I
6 did when I was with them. I traveled all over to
7 different states, installing these systems and
8 performing soil excavations.

9 Q. The remediations that you designed and
10 then later actually performed, they worked?

11 A. Yes.

12 Q. Okay. Did those SEMS sites that you
13 worked on involve litigation?

14 A. No.

15 Q. So the assessment and remediation and
16 actual remediation work that you were doing at
17 SEMS had nothing to do with litigation?

18 A. No, it did not.

19 Q. Since you joined ICON in 2009, have you
20 also done actual remediation work on the ground?

21 A. Yes, I have.

22 Q. About how many projects have you been
23 involved with at ICON that included that actual
24 remediation work? Soil and/or groundwater.

25 A. Probably ten to 15.

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1 Q. Did those ten to 15 sites where you did
2 actual remediation projects while working at ICON
3 involve litigation?

4 A. No, they did not.

5 Q. So in your experience, Mr. Sills, at any
6 of these sites, whether we're talking about UST or
7 underground storage tanks sites, refinery, or
8 chemical plants or oil field E&P sites like what
9 we're here about today -- whether there's
10 litigation involved or not, does your approach
11 change in any way?

12 A. No, it doesn't. Your objective is to
13 determine if there's contamination on the property
14 and design a remediation technology to remove that
15 contamination to a certain standard.

16 Q. And that's exactly what you did in this
17 case in terms of your role in developing the MFP
18 for this property; right?

19 A. That is correct.

20 Q. We'll talk more about that methodology a
21 little later, but for the benefit of the panel,
22 can you tell us if the techniques that you used to
23 assess this site and determine the required
24 remediation plan are recognized peer-reviewed
25 methods?

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1 A. Yes. It's pretty standard methods that
2 we used to generate this remediation plan.

3 MR. KEATING: And for purposes of the record
4 and for the panel's reference, Mr. Sills' CV
5 is introduced into evidence already as part
6 of Exhibit E. It's specifically Appendix H.

7 BY MR. KEATING:

8 Q. Mr. Sills have you been qualified and
9 accepted as an expert in a court of law?

10 A. Yes, I have.

11 Q. Has your testimony ever been excluded or
12 limited by any court or administrative agency?

13 A. No, it has not.

14 MR. KEATING: At this point, Your Honor and
15 the panel, I'd like to tender Mr. Sills as an
16 expert in site assessment and remediation,
17 interpretation and application of 29-B and
18 interpretation and application of RECAP.

19 JUDGE PERRAULT: Any cross?

20 MR. CARTER: No cross, Your Honor, but I just
21 think interpretation of 29-B is not an
22 appropriate expert subject.

23 JUDGE PERRAULT: Say that louder.

24 MR. CARTER: No cross, Your Honor, but I just
25 think interpretation of 29-B and RECAP is not

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1 an appropriate subject of expert testimony
2 from this witness based on his testimony so
3 far. It hasn't been established.

4 MR. KEATING: Are you traversing it?

5 MR. CARTER: No. I'm objecting -- have you
6 tendered the witness?

7 MR. KEATING: I have.

8 MR. CARTER: Yeah. So I'm objecting on
9 those -- on that basis.

10 JUDGE PERRAULT: I'm going to allow him. And
11 say the areas of expertise.

12 MR. KEATING: Site assessment and
13 remediation, which he's been doing for
14 23 years over several hundred sites;
15 interpretation and application of 29-B, which
16 he's been doing for about 14 years;
17 interpretation of and application of RECAP,
18 which he's been doing for 23 years.

19 JUDGE PERRAULT: I'm going to allow it.
20 So -- over your objection.

21 MR. KEATING: Thank you, Your Honor.

22 JUDGE PERRAULT: Please proceed. You've been
23 accepted as an expert in those three fields.

24 BY MR. KEATING:

25 Q. Mr. Sills, did you participate in

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1 preparing the initial assessment and remediation
2 report submitted by ICON in this case? Not to the
3 panel but in the underlying case.

4 A. Correct. I participated and assisted in
5 all three of the reports that have been generated
6 so far in this case, including the MFP submitted
7 to the panel.

8 Q. And this was discussed some in your
9 deposition, but your signature is on the MFP
10 that's presented to the panel, but it does not
11 appear on the remediation report in the litigation
12 or the rebuttal report that ICON submitted in the
13 litigation. Why is that?

14 A. Well, during the time that we were
15 putting together the MFP, we had another case
16 going on that Mr. Miller and Mr. Prejean were
17 involved with and they needed my assistance a
18 little bit more in this instance. So they
19 figured, since I helped with the majority of the
20 work, I should be -- I should have my signature on
21 the report, and pretty much -- so I can, you know,
22 kind of clarify it. Every legacy report that
23 comes out of ICON is generated by three people.
24 It's Mr. Miller, Mr. Prejean, and myself. Now, me
25 and Mr. Prejean alternate on which reports we

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1 sign, but just because our signature isn't on a
2 report doesn't mean that we didn't assist in the
3 preparation of that report.

4 Q. Gotcha. Tell the panel -- that
5 three-man party you're talking about where you all
6 get together and work on and prepare the reports
7 in the litigation -- what was your role in
8 preparing those reports? The remediation report
9 and the rebuttal report.

10 A. My role is pretty consistent throughout
11 these reports. I mainly handle the soil
12 delineation, any kind of contouring. Most of the
13 time, I help with the calculation of the
14 background soil standard. I'll help Mr. Miller
15 put together some of his figures, and I'll assist
16 with the actual text of the report along with
17 assisting Mr. Prejean in calculating the costs.

18 Q. Okay. And those things that you did
19 that you just described to support the creation of
20 the original assessment and remediation report and
21 then the rebuttal report in the litigation, those
22 things informed or helped you prepare or
23 prepare -- assist and prepare in the MFP; correct?

24 A. That's correct.

25 Q. Now, this was covered in your deposition

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1 too. Just to try to save some time here, ICON did
2 not include RECAP -- a RECAP evaluation or
3 standards in its original assessment and
4 remediation report; correct?

5 A. No, we did not.

6 Q. Okay. And why is that?

7 A. Because the original report was to
8 address lease obligations. So whether it was
9 implied or expressed original condition language
10 in the lease, that's -- what the original report
11 was meant to satisfy was lease obligations, which
12 is a different standard than 29-B.

13 Q. And the 29-B and RECAP parameters that
14 ICON included in its rebuttal report were directly
15 in response to Chevron's report submitted in the
16 case; right?

17 A. That's correct.

18 Q. We've talked about the various soil and
19 groundwater samples taken by ICON in this case.
20 Tell the panel what role you had in selecting
21 sample locations.

22 A. Usually, the first thing that we do on
23 these sites is we try to gather as much well
24 information and -- I mean, oil well historical
25 information and also aerials, and so me and

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1 Mr. Miller will get together and look at this
2 information and try to determine where previous
3 operations existed on the property, and that helps
4 us locate potential borings for site investigation
5 purposes.

6 Q. Okay. And after that's done, ICON
7 personnel physically go out to the field and take
8 these samples, right?

9 A. Correct. After we locate them on our
10 AutoCAD and give them GPS coordinates, they'll go
11 out and collect the data in the field.

12 Q. In this case that was done for the soil
13 using a geoprobe?

14 A. That's correct.

15 Q. And that's standard methodology, and, in
16 fact, I think that's what ERM does as well; right?

17 A. Correct. Most people, when they collect
18 these soil samples, they'll use some kind of
19 direct push technology.

20 Q. Okay. And when this occurred on the
21 Henning property -- for all of the data sets we're
22 talking about, when ICON was doing the sampling
23 where it wanted to, ERM got splits of those
24 samples, and then on the other side, when ERM was
25 doing samples where they wanted to, ICON got

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1 splits; right?

2 A. Correct. That's typical once these
3 suits are filed.

4 Q. And then both ICON and ERM sent those
5 off to a certified lab or certified labs, as the
6 case may be, and for analysis and then got the
7 results back; right?

8 A. That's correct.

9 Q. In this case the lab that ICON used for
10 soil was Element; correct?

11 A. That's correct. We used Element to run
12 everything except for any radium samples. Radium
13 is run through Pace.

14 Q. Right. And there's been a lot of talk,
15 especially this morning with Dr. Schuhmann, about
16 quality control analysis and so on and so forth.

17 Mr. Sills, you agree that both ICON and
18 ERM routinely use Element lab, which is what ICON
19 used in this case; right?

20 A. Correct. And they've also been
21 subpoenaed before in the past for their records on
22 how they analyze different samples on other cases
23 and passed with flying colors. So --

24 Q. And they have their own built-in quality
25 control processes, don't they?

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1 A. Yes, they do.

2 Q. So the notion of quality control of the
3 lab samples and all this is really a nonissue, is
4 it not?

5 A. To me, yes.

6 Q. Okay. Did that initial set of soil
7 samples that you got, when you're describing the
8 process y'all went through, show exceedances on
9 the property?

10 A. Yes, it did.

11 Q. Okay. So from that, ICON then went out
12 and did additional sampling, soil sampling; right?

13 A. That's correct. I think we went out
14 there an additional two times.

15 Q. Okay. So that would be three rounds of
16 sampling. And at that point did ICON feel it had
17 a sufficient data set for the contamination on the
18 Henning property?

19 A. We felt pretty confident that we could
20 generate a process to clean up the site based on
21 the sampling data that we had.

22 Q. Did you have any role in determining
23 where to screen groundwater monitoring wells?

24 A. No, I don't. That's usually determined
25 by Mr. Miller or the on-site field geologist who's

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1 actually looking at the cores.

2 Q. Okay. So once the ICON sampling and
3 then later the ERM sampling was all completed and
4 everybody had splits of everybody's samples,
5 that's the entirety of the data set that this
6 panel and these experts are working with; right?

7 A. Yes.

8 Q. What role did you specifically have in
9 preparing the MFP?

10 A. Again, I contoured the soil data, helped
11 put together the figures of the report, and then
12 also assisted in the preparation of the text.

13 Q. You didn't determine whether there was
14 going to be groundwater remediation or not. That
15 was Mr. Miller; correct?

16 A. That's correct.

17 Q. What regulations did you apply for your
18 proposed soil remediations in the MFP?

19 A. Only 29-B.

20 Q. Do you believe you complied with all
21 aspects of 29-B in preparing ICON's soil
22 remediation in the MFP?

23 A. Yes. We submitted a -- two plans. One
24 plan is 29-B with no exceptions, and the other one
25 is a 29-B plan with exceptions.

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1 Q. So the goals of ICON with this feasible
2 plan that you're recommending to the panel are to
3 address the soil and groundwater contamination to
4 29-B standards; right?

5 A. That's correct.

6 Q. Okay. I want to take a look at this.

7 MR. KEATING: And, Scott, if you can zoom in
8 to the -- maybe like the top quarter of the
9 page, please? Perfect.

10 BY MR. KEATING:

11 Q. Mr. Sills, having reviewed the soil
12 data, it's your opinion that there are, in fact,
13 29-B exceedances on the Henning property; right?

14 A. That's correct.

15 Q. And they're summarized in Table 1 found
16 in ICON's MFP; right?

17 A. Yes.

18 Q. We're not going to go through all the
19 table. The panel can do that as they see fit, but
20 just to make it clear, what we've got here at the
21 top in purple, you've got the 29-B upland pit
22 closure standards, and then you've got the various
23 constituents in those columns; right?

24 A. That's correct.

25 Q. And then under that, you've got the 29-B

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1 elevated freshwater standard where we have some
2 wetland areas on the property; right?

3 A. That is correct.

4 Q. And then that's a very small portion.
5 Most of it's upland; right?

6 A. Yes.

7 Q. So when the panel looks through and --
8 MR. KEATING: Scott, can you pan over a
9 little to the right? This may be obvious --
10 but that's good. Just leave it like that.

11 BY MR. KEATING:

12 Q. Just to be clear, where we see a purple
13 highlighted number on a given column for a given
14 constituent, that's an upland closure standard
15 exceedance?

16 A. Correct. So the boring locations that
17 aren't shaded are considered -- are what we would
18 consider in an upland area. The boring locations
19 that are kind of shaded in green are what we're
20 considering in a wetland area. So those are going
21 to be compared to those particular standards,
22 depending on where the sample is located.

23 Q. And Table 1, which, I think, spans about
24 nine or ten pages, is the totality of all the
25 samples taken in this case; correct?

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1 A. All the samples taken by ICON in this
2 case.

3 Q. Right. That includes some with and
4 without the limited admission areas; right?

5 A. That is correct.

6 Q. So crunching it down, I believe -- and
7 we'll talk about this in a little greater depth in
8 a moment, but both ICON and ERM's soil sampling
9 data showed 29-B exceedances at, I believe, 12
10 different sample locations in the limited
11 admission areas; is that right?

12 A. I think that's correct. I know that
13 they had some exceedances, but I don't recall the
14 exact number of their exceedances.

15 Q. And assuming that location number is
16 correct, the exceedances that are documented in
17 the limited admission areas and that you're
18 addressing in your soil remediation report are EC,
19 ESP, and SAR; correct?

20 A. That's correct.

21 Q. And in one instance, leachate chlorides?

22 A. Well, what we did was we calculated --

23 Q. Leachability?

24 A. -- leachability and correlated that to
25 an EC standard of 10.84. So that's what we were

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1 trying to address in one area.

2 Q. And on that topic, Mr. Olivier, I
3 believe it was, asked about the leachate chloride
4 analysis and whether it was saturated or
5 unsaturated samples. Just for the benefit of the
6 panel, can you answer that for us?

7 A. Right. So those were taken right above
8 the screened interval. So those are going to be
9 addressed during our groundwater remediation
10 procedures because as -- if I recall right, I
11 think that was like 48 to 50. Those wells are
12 screened right at 50 feet. So we anticipate that
13 to be pretty much water, to where we can remediate
14 it with a groundwater pump and treat.

15 PANELIST OLIVIER: So this is Stephen
16 Olivier. So for clarification, those
17 samples, were they in the -- were the soils
18 saturated where the leachate was taken or --

19 THE WITNESS: To my knowledge those were
20 right above the saturated zone. We typically
21 don't like taking the leachate chloride from
22 the saturated zone because we want to see
23 what's actually leaching into the
24 groundwater, but they're right above the
25 groundwater water table.

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1 PANELIST OLIVIER: And generally in your
2 boring logs that y'all had submitted, do you
3 know the terminology y'all typically use for
4 dictating what's saturated versus what's not
5 saturated?

6 THE WITNESS: Usually they'll be some kind of
7 indicator, that they might say "wet,"
8 "moist." And usually if it's not -- if it
9 doesn't have any liquid in it, a lot of times
10 they'll put "dry" next to it. But wherever
11 they see a definite water zone, they usually
12 indicate that with "wet."

13 PANELIST OLIVIER: Okay.

14 PANELIST DELMAR: Just to follow up with --
15 on -- this is Chris Delmar. Just to follow
16 with -- on Stephen's question about the
17 terminology, I did review a couple of boring
18 logs this morning, and you used four distinct
19 terms. "Moist" popped up quite often in sort
20 of like the very shallow subsurface where
21 there was clays that were obviously -- you
22 know, have water because clay never gets rid
23 of water around here. And then as you go
24 further down closer to the screened interval,
25 we saw "wet" there, and so I guess their

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1 "moist" might be more of a -- and then we
2 should say, in that case, "moist" may be more
3 of a just generic sort of "well, this clay is
4 not dry"?

5 THE WITNESS: Damp. You know, there's some
6 moisture in it. It's not dry.

7 PANELIST DELMAR: And one other term you used
8 in place of "wet," I think, was "saturated."
9 Would that sort of be equivalent to "wet" in
10 that particular case.

11 THE WITNESS: Usually most of our guys, when
12 they see -- when they say "saturated," when
13 they cut the core open, the liner, there's
14 actually standing water in the liner. So
15 they -- right. So they'll say "saturated" in
16 that instance to mean that there's actually
17 water in the liner when they're cutting it
18 open.

19 "Wet" just -- that may mean that -- not
20 quite saturated, but there's a lot of fluids
21 in the material. But the problem is each
22 geologist is going to describe it just a tad
23 bit different than another one. So -- but --
24 and we try to keep it pretty standard, and
25 that's my understanding of their

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1 descriptions.

2 PANELIST DELMAR: Okay. Thank you.

3 BY MR. KEATING:

4 Q. Let's talk about your proposed
5 remediation plan. All right. You presented two
6 options in ICON's MFP for the soil remediation;
7 correct?

8 A. That is correct.

9 Q. Both of the options include the
10 groundwater portion, but it's the same in both;
11 right?

12 A. That's correct. The groundwater is
13 going to background in both options.

14 Q. So Plan 1 is applying 29-B to the soils
15 with no depth limitation or exceptions; right?

16 A. Correct. So anywhere that we had a 29-B
17 exceedance, we scoped it to come out all the way
18 down to a depth of 32, which I think is at one
19 location at H-16.

20 Q. Okay. And that is where we're
21 addressing leachate chlorides?

22 A. No. That was just any exceedance. That
23 was still an EC above 4.

24 Q. Fair enough. So just to get this out of
25 the way before Mr. Carter gets up here, ICON --

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1 Jason Sills, ICON -- is not recommending to this
2 panel that we excavate down to 32 feet; correct?

3 A. No, I'm not.

4 Q. Now, this is included in ICON's
5 remediation plan as an option because to apply
6 soil remediation to all 29-B exceedances
7 regardless of depth in the soil -- because that's
8 what Chapter 6 requires; right?

9 A. That's correct.

10 Q. You have to include that as an option;
11 right?

12 A. That is correct.

13 Q. So I want to make this clear too. I
14 want to try and assure the panel that there is
15 nothing remotely unreasonable about what you are
16 proposing for the soil remediation in this case.
17 First, we have five distinct limited admission
18 areas: 2, 4, 5, 6, and 8; correct?

19 A. Yes.

20 Q. And are you proposing any soil
21 remediation at all in Area 6 or Area 8?

22 A. No, I'm not.

23 Q. Are you proposing any excavation in
24 Area 2 to the far west?

25 A. Other than amending.

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1 Q. Only amending; right?

2 A. Right. And that's actually with the
3 29-B plan with no exceptions.

4 Q. And so what you're actually proposing in
5 terms of excavating and removing soil is limited
6 to these tiny pink boxes we see in Areas 4 and 5;
7 is that true?

8 A. That's correct.

9 Q. And the total surface area we're talking
10 about is just about 1.2 acres, is it not?

11 A. Correct.

12 Q. That's the plan with no exceptions.
13 That's not even the one you're recommending;
14 right?

15 A. That's correct.

16 Q. This property is roughly 1200 acres;
17 correct?

18 A. That is correct.

19 Q. So your outlandish, unreasonable, not
20 feasible soil remediation plan is for 0.1 percent
21 of the surface area of this property; true?

22 A. That's correct.

23 Q. Now, you mentioned that you're employing
24 two different techniques to remediate the soil in
25 both plans, an Option 1 with no depth limitations

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1 and an Option 2.

2 Tell the panel the two different
3 options -- the two different techniques for
4 remediating the soil and why you're employing the
5 two different techniques.

6 A. So the two different techniques that
7 we're employing is: Anything that exceeds an EC,
8 we're recommending hauling off and disposing at a
9 licensed landfill. If an EC or SAR exists and
10 there's no presence of EC exceedance, then we're
11 proposing to actually amend on-site with a gypsum
12 amendment.

13 And the reason why we're proposing that
14 is I haven't seen very good success with trying to
15 amend EC because gypsum is a calcium-rich
16 amendment and so what it does is it will replace
17 the sodium, and that's what lowers your ESP and
18 SAR is that, but EC actually measures your total
19 ions. So replacing a sodium ion with a calcium
20 ion instead of sodium chloride, you wound up with
21 calcium chloride, which is still a salt.

22 Q. So the amendment -- the areas where
23 you're recommending amendment with the use of
24 gypsum is to address SAR and ESP; correct?

25 A. Correct.

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1 Q. And the use of gypsum for a soil
2 amendment to address SAR and ESP is a
3 scientifically proven and accepted method, is it
4 not?

5 A. It's very widely used, yes.

6 Q. And also practically used and proven to
7 work; correct?

8 A. Yes.

9 Q. All right. And excavation and removal
10 of soil contaminated with EC is also an accepted
11 and proven method, is it not?

12 A. Yes.

13 Q. It's also used in practice all the time,
14 is it not?

15 A. Yes.

16 Q. This type of soil remediation that
17 you're talking about, use of excavation and
18 removal and also amendment with gypsum, those are
19 techniques that ICON itself has actually done on
20 property in Louisiana; true?

21 A. We've done the excavation. We've done
22 some sort of amendment. We have not used a gypsum
23 amendment before.

24 Q. Soil amendment and excavation is
25 commonly used by ICON?

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1 A. Right. Right.

2 Q. Just to head off another issue,
3 Mr. Gregoire was questioning Mr. Miller yesterday
4 about an issue that kind of dovetails between you,
5 the soil guy, and Greg, the groundwater guy. But
6 talking about leaving the hole open where you're
7 excavating where there's a leaching risk for the
8 chlorides. Do you remember that?

9 A. Yes.

10 Q. And he was asking about did you do any
11 flushing modeling and all these other sorts of
12 things for remedial purposes. Do you remember
13 that line of questioning?

14 A. Yes.

15 Q. You heard Mr. Miller's testimony?

16 A. That's correct.

17 Q. Is that hole being left open to
18 remediate the groundwater?

19 A. No. It's only there to assist, and
20 it's -- I mean, I know it was called a trench. I
21 think of it more as a pond. You know, it's .17
22 acres. We're planning on leaving it down to 18.
23 The leachate chloride that's right below -- the
24 sample that was collected that's right below the
25 18 feet was 11. So that's pretty close to our

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1 standard that we were looking to remediate to. So
2 we were just leaving this area open only to
3 assist, not to say that it has to be left open or
4 our plan couldn't be accomplished like it was. It
5 was only to assist our program that we were trying
6 to implement.

7 Q. And by leaving that open and letting it
8 fill with rainwater, the effects you're having is
9 to have it assist in recharging the aquifer;
10 right?

11 A. Right. And also to -- while it was
12 open, it's going to flush some of the salts that's
13 below it into the groundwater that can be
14 recovered and run through our treatment system. I
15 mean, it would only help.

16 Q. Okay. Mr. Sills, just for the benefit
17 of the panel, you talked about ICON having done
18 excavation in other properties in Louisiana. What
19 is this here?

20 A. That's at a tank site ICON did an
21 excavation at, and that's just kind of showing you
22 the process and proof that ICON has done soil
23 excavation before.

24 Q. And this was something that was
25 regulated by LDEQ?

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1 A. That's correct.

2 Q. Did LDEQ tell you this was unreasonable?

3 A. No, they didn't.

4 Q. And, in fact, you did it and it worked;
5 right?

6 A. Well, right. It removed the source
7 material, which is what the objective was.

8 Q. What are we looking at here, Mr. Sills?

9 A. That's just another excavation project
10 that we did. This wasn't -- this project wasn't
11 designed for remediation. Basically what it was,
12 is we were digging two test -- oh, I'm sorry -- a
13 three-test pit in an unlicensed landfill that was
14 left on somebody's property that we were trying to
15 do waste characterization on.

16 Q. But the bottom line, Mr. Sills, is ICON
17 doesn't simply design conceptual remediation
18 plans; you have significant experience, ICON has
19 significant experience in actually carrying them
20 out; right?

21 A. Correct.

22 Q. Let's talk about your Option 2, what
23 you're actually recommending to this panel to be
24 the most feasible plan to remediate the soil in
25 this case.

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1 Explain the depth limitations that
2 you're applying here.

3 A. So we're proposing to dig down to
4 12 feet for any 29-B exceedance of EC, amend any
5 29-B exceedance of SAR and ESP to 12 feet, and
6 then around H-16 we're digging down to 18 feet.
7 That exceeds the 10.84 leaching EC standard that
8 we -- or that Mr. Miller calculated.

9 Q. Okay. And looking at this -- Mr. Sills,
10 this is the -- a little bit of a more zoomed-in
11 shot of the soil excavation areas and the plan
12 that ICON is actually recommending this panel
13 accept, and it's a little bit less than -- a
14 surface acreage than the other plan; right?

15 A. That's correct.

16 Q. And it's a lot less volume because
17 you're not going down as deep; correct?

18 A. That's correct.

19 Q. And it's about half the cost; right?

20 A. It's about half the cost.

21 Q. Now, much was made in this case
22 throughout the testimony about root zones, about
23 rice, about sugarcane, about trees, and I want to
24 make one thing really clear so hopefully the panel
25 doesn't waste a lot of time chasing that.

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1 The boxes we have here --

2 MR. KEATING: And for the benefit of the
3 panel, Scott, if you can zoom on
4 Areas 4 and 5.

5 Your Honor, may I step over?

6 JUDGE PERRAULT: Yes, please.

7 BY MR. KEATING:

8 Q. These are references to where -- the
9 sample locations we see in Table 1 of ICON's MFP;
10 right?

11 A. That's correct.

12 Q. H-1, 17, 18, 15, 16, and 21; right?

13 A. That's correct.

14 Q. And other than this one right here, we
15 see them all shaded in pink. What's the
16 significance of the one shaded in blue here?

17 A. That's the one that was calculated as a
18 leachable risk and that we were going -- that's
19 the only site that we're going deeper than
20 12 feet.

21 Q. And I think we heard consistent
22 testimony from Chevron's experts, Mr. Ritchie,
23 Mr. Angle -- and if I'm wrong, they can get back
24 up here on rebuttal and tell me I'm wrong -- that
25 ESP and SAR are not as big of an issue for crops

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1 and plants and trees. Do you recall hearing that?

2 A. Yes, I do.

3 Q. But that EC is; right?

4 A. EC above 4, yes.

5 Q. And 29-B says that EC -- 4 is the
6 threshold for EC; right?

7 A. That's correct.

8 Q. And there are publications, even, that
9 Mr. Ritchie acknowledged where an even lower EC
10 can affect certain crop growth?

11 A. Correct. I've seen publications, and I
12 think it's -- 1.7 is the -- kind of the EC
13 threshold for, like, sugarcane.

14 Q. Okay. These areas -- EC is above 4 in
15 all of these areas where you're recommending
16 excavation; right?

17 A. Where we're recommending excavation,
18 yes, but I can't remember if there's one or two
19 that's just amendment only.

20 Q. What you're doing here is removing EC
21 that's above 4 down to 12 feet?

22 A. That's correct.

23 Q. It's that simple, isn't it?

24 A. Yes.

25 MR. KEATING: You can pan back out, Scott,

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1 please.

2 BY MR. KEATING:

3 Q. Your soil remediation plan does not
4 address barium; correct?

5 A. No, it does not.

6 Q. And reason number one, barium is not a
7 29-B constituent, is it?

8 A. No, it's not.

9 Q. When you were generating your report,
10 you were concerned about barium. Tell the panel
11 about that and what you did.

12 A. Well, since it wasn't included in 29-B
13 and we had high concentrations of barium in a
14 large portion of the property, I reached out to
15 Dr. Jim Rodgers. He's an ecologist and works in
16 the state of Texas a lot, and he led me to a
17 website under TCEQ, Texas Commission on
18 Environmental Quality, and basically it's a site
19 that you can look up different constituents and,
20 depending on what species of animal's on a site,
21 it will tell you what limit that constituent could
22 be before it starts causing harms to that animal.
23 And so I knew that they duck hunted in the area.
24 So I looked at a mallard and it came up with
25 832 milligrams per kilogram was the standard

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1 according to that website.

2 And so I basically gave a contingency
3 plan that if that was the cleanup level -- if that
4 was correct, then it would cost \$5 million to
5 address that issue. I wasn't suggesting to
6 perform the remediation, just that there could be
7 an issue with barium, and it needed to be
8 evaluated.

9 Q. You didn't want to just completely
10 ignore barium; fair?

11 A. That's correct.

12 Q. And you're not professing to be an
13 ecologist or have expertise on that subject
14 matter; correct?

15 A. No. That's -- I'm not.

16 Q. That's exactly why you reached out to
17 Doc Rodgers, is it not?

18 A. That is correct.

19 Q. And you understand and you heard earlier
20 today that's why we, on behalf of Mr. Henning,
21 hired Dr. Schuhmann to talk about that and to
22 address it; right?

23 A. That's correct.

24 Q. And you're deferring to him on that;
25 fair?

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1 A. Yes, I am.

2 Q. Okay. Let's talk about the groundwater
3 remediation plan. Well, first let's get to this.

4 I heard Dr. Connelly -- and you heard
5 some of her testimony, did you not?

6 A. A little bit.

7 Q. Okay. You're familiar with her subject
8 matter; right?

9 A. Yes.

10 Q. Talk about, oh, all these beautiful
11 trees, all these things. The areas where ICON is
12 proposing its soil excavation in this case, that's
13 not where the rice is growing; right?

14 A. No. The rice is growing on the other
15 side of the property, from my understanding.

16 Q. That's not where all the live oak trees
17 are located; right?

18 A. That's correct.

19 Q. This is just fallow pasture; right?

20 A. Correct.

21 Q. So even though there's been -- and where
22 is this project, Mr. Sills?

23 A. That's in North Louisiana. That's -- we
24 called it Lazarre.

25 Q. Okay. In Lazarre they're excavating

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1 significant amounts of soil here in the middle of
2 a pine forest, are they not?

3 A. Yes.

4 Q. And this is still Lazarre but just
5 another shot, and what does this show?

6 A. That just shows kind of the depth of the
7 excavation and the size.

8 Q. So neither the depth nor the surface
9 area we're talking about here is unheard of or
10 unreasonable in any way; right?

11 A. No. Actually, 1.2 acres is a very small
12 area when we're looking at these legacy sites.
13 Usually it's much, much larger.

14 Q. This is just another shot from Lazarre?

15 A. That's correct.

16 Q. What is this?

17 A. That's a picture of an old VPSB case.

18 Q. There was a lot of talk about East White
19 Lake. This is not the East White Lake property?

20 A. No, sir. This is not the East White
21 Lake property.

22 Q. But this is again showing a large-scale
23 soil excavation being done at a site like this;
24 right?

25 A. Right. And you can see they've got a

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1 fairly large surface area disturbed.

2 Q. What are we looking at here?

3 A. Looks like some solidification, and
4 they're about to get an excavator stuck.

5 Q. And the reason I'm showing these to the
6 panel, Mr. Sills -- you've said it. I want them
7 to see it. This is not unheard of. This is not
8 unreasonable. This happens all the time, and
9 frankly this property in this case we're talking
10 about and the plan we're recommending is on a much
11 smaller scale than all these?

12 A. Correct. I mean, y'all see it all the
13 time. I mean, typically a production pit is
14 almost an acre. We've -- I've seen production pit
15 facilities that are 4 or 5 acres. So, I mean,
16 to -- for a surface area of 1.2 acres, that's
17 very, very small.

18 Q. This is another shot from VPSB?

19 A. That's correct.

20 Q. And you heard, I believe it was,
21 Mr. Angle talking about, well, yeah, but in that
22 case we were excavating a pit, or, yeah, but in
23 that case it involved a pit.

24 Do you remember hearing about that?

25 A. Yes.

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1 Q. There were pits right in the AOIs that
2 we're talking about in this case on this property,
3 were there not?

4 A. Yes, there was.

5 Q. And this is a shot of what it looks like
6 when they're finished with their excavation and
7 backfilling; correct?

8 A. That's correct.

9 Q. Let's talk about ICON's groundwater
10 remediation plan, and probably to everyone's
11 relief, we're not going to talk about pica or
12 leaching factors and anything like that. Okay?
13 We're going to cut right to it.

14 What role did you play, Mr. Sills, in
15 formulating ICON's groundwater remediation plan?

16 A. Basically, Mr. Miller gave me the
17 areas -- the -- as you heard him describe
18 yesterday, the zones, the thicknesses, the
19 hydraulic conductivity based on those zones and,
20 from that information, I calculated the pore
21 volumes in each zone. And based on our starting
22 concentration and our ending concentration, we
23 were able to figure up the number of pore volume
24 flushing; and then based off of that, we
25 calculated from the Theis our radius of influence

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1 per zone, how many wells we were needing in that
2 zone, the pumping rate for that zone; and then
3 that, in turn, gave us how many years it would
4 take to remediate that zone based on your pumping
5 rate and your number of core volume flushes.

6 Q. And to be fair, Mr. Sills, anyone -- the
7 best scientist in the world -- these time
8 estimates -- based on the pore volume flushing and
9 the other factors you have to take into
10 consideration, these are your best estimates;
11 fair?

12 A. Correct. These are perfect world
13 scenarios. You know, the -- as many groundwater
14 recovery systems as I've installed and operated,
15 it's very, very rare that when you say, okay,
16 something is going to last 1.5 years, it lasts
17 1.5 years. Sometimes it's a little bit less;
18 sometimes it's a little bit more. But this is the
19 data and the equations that are available to us to
20 give us our best estimate on our remediation
21 times.

22 Q. And the data and equations that you used
23 to come up with that best estimate for the
24 groundwater remediation times, those are the
25 standards that everyone uses; true?

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1 A. I don't know if I'd say everyone uses,
2 but they're well-published and peer-reviewed
3 equations that are used between the Theis and the
4 EPA remediation equations that we use.

5 Q. And for somebody to get up here and poke
6 holes in the precision of your time frames by a
7 month or two here or a month there would be not
8 only unfair but a waste of time, would it not?

9 A. Well, like I said -- I mean, it's hard
10 to calculate the exact time limit it would take to
11 remediate the groundwater. It's just -- it's the
12 best estimate that you can get.

13 Q. Now, let's talk about Phase 1 and
14 Phase 2. Explain to the panel how that's going to
15 play out.

16 A. Basically, with Phase 1 -- and a lot of
17 these are going to be going on at the same time.
18 It would be the installation of our groundwater
19 recovery system -- I mean our groundwater recovery
20 wells -- sorry, I misspoke -- and then sampling of
21 those wells, and that's kind of going on in
22 conjunction with each other. We wouldn't install
23 400-and-something wells and then come back and
24 sample all 400 wells. We'd be sampling as we were
25 installing.

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1 Then you would compile all that data to
2 make sure it doesn't differ from what you already
3 have and to make sure that the systems that you
4 put on the site are specifically compatible to
5 handle the concentrations that you have in the
6 groundwater. And then the last part of the
7 Phase 1, the pilot testing, that's always
8 fine-tuning the system. Whenever you start up a
9 system, you might have to turn one well up to get
10 more volume out of it, turn another well down.
11 You know, in this instance -- and you heard
12 Mr. Miller talking about it yesterday. We're
13 going to want to pull from the south, which is
14 pulling freshwater into the contamination, which
15 will give you a flushing effect. So that's -- at
16 this point that's when we'd be fine-tuning the
17 recovery rates from the -- from each well.

18 Q. And you mentioned the number of wells
19 that are going to be included in this process,
20 and, again, that's a best estimate, is it not?

21 A. Yes. I feel fairly confident with
22 that -- you know, with the number of wells as far
23 as the radius of influence because most of the
24 wells are going to be in the A bed.

25 Q. Okay. And you heard Mr. Gregoire making

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1 much of the fact that there are 400 and how many
2 wells?

3 A. It's over 450. I don't remember the
4 exact number, but it comes out to almost -- about
5 six per acre.

6 Q. And what drives the number of wells that
7 you have in your plan?

8 A. Well, it's a couple of things. I mean,
9 it's the area that we're dealing with. It's over
10 80 acres plus it's the yield of the zone that
11 we're trying to remediate. If you have a higher
12 yield aquifer, you're going to have less wells.

13 Q. So to be clear to save Mr. Carter some
14 time, hopefully, you didn't calculate the yield.
15 Mr. Miller did that?

16 A. That's correct.

17 Q. You took his calculations, which he
18 already talked about -- we went through at length,
19 and you just did the math; fair?

20 A. That's fair.

21 Q. All right. The number of wells it takes
22 is not a subjective thing. It's just what the
23 math told you; right?

24 A. Correct. And that's based on the yield
25 per well and off the Theis equation.

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1 Q. Now, the actual treatment system that's
2 going to be used is a pump-and-treat system with
3 reverse osmosis; correct?

4 A. That's correct.

5 Q. Let's get this out. ICON has not
6 previously done a groundwater remediation using
7 pump and treat with RO; right?

8 A. No. That's correct.

9 Q. But it's an accepted methodology, is it
10 not?

11 A. Yes. So on the West Coast is what they
12 primarily use to desalinate seawater, make it okay
13 to drink. I think they use it on oil rigs for
14 drinking water. They've used it in the Midwest to
15 treat groundwater with contamination of chlorides,
16 radium, and nitrates. So it's an accepted
17 practice, and, I mean, it's been used before.

18 It's just not been used by us, and I don't know of
19 any Louisiana sites that it's been used at.

20 Q. So the driving groundwater constituent
21 is chlorides, is it not?

22 A. Correct.

23 Q. And that's what it's been used for in
24 other applications that you've yourself looked at?

25 A. Correct.

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1 Q. Explain to the panel how this system
2 would work.

3 A. So basically it's going to have a
4 stripper on it before, and that's to remove any
5 hydrocarbons. You've got some pre-filtrations to
6 remove, iron and some other things that the system
7 can't handle, but once the water gets into the RO
8 unit, it will pass through a membrane. And then
9 you'll have two streams that are coming out of
10 that system. One is going to be a super
11 concentrated retentate that's compatible for
12 injection and then freshwater, and so the
13 freshwater can be discharged: Ditch, you know,
14 pond, wherever you want to use the water.

15 Q. This graphic we're looking at is an
16 example of what this system looks like and its
17 component parts?

18 A. Correct. So we have to use two systems
19 at this property. One is a seawater system. One
20 is a brackish system. The determining factor on
21 that is your TDS. So the brackish system can only
22 handle a TDS up to 5,000. So anything above 5,000
23 TDS has to be run through the seawater.

24 Q. And we have concentrations above that
25 threshold in this groundwater?

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1 A. Yes, sir.

2 Q. Okay. Now, I see at the bottom there
3 "Pure Aqua, Inc." Is that where you got this
4 figure?

5 A. Yes. That's where we got our most
6 recent quote from, is Pure Aqua.

7 Q. So the quote included as a supporting
8 documentation to ICON's MFP is something you
9 obtained directly from the source? From Pure
10 Aqua?

11 A. That's correct.

12 Q. Did you also speak with someone at Pure
13 Aqua?

14 A. So we spoke with them and told them
15 exactly what we were planning on doing and also
16 let them know the concentration of the
17 constituents that we were dealing with, and they
18 basically told us okay. And they quoted us
19 systems based on what -- the information that we
20 gave them.

21 Q. So it's specific to this site and the
22 constituents we're addressing?

23 A. Well, it's specific to the methodology
24 that we're using it for. I don't recall, as I'm
25 sitting here today, if it was specific for this

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1 site, but the same parameters that were -- I mean,
2 the same constituents that we're seeing at this
3 site were very -- were the same constituents that
4 the system was originally quoted for.

5 Q. And that's what I meant. I asked it
6 poorly. So I apologize.

7 And when you spoke to Pure Aqua, they
8 told you this application had been used for
9 groundwater chlorides in other instances; right?

10 A. Well, they told us that it was used
11 for -- I mean, that's why they designed this RO
12 system, was for removal of salt. So yes.

13 Q. This is what it's made for?

14 A. Correct.

15 Q. And it works, to your knowledge?

16 A. As far as I'm aware of. I mean, they've
17 been in business for quite some time now. So, I
18 mean, I wouldn't think they'd be pawning a
19 technology that wasn't working and stay in
20 business.

21 Q. Now, again, we all understand and
22 Mr. Gregoire loves to ask you that ICON hasn't
23 used RO for its pump and treat in Louisiana. But
24 ICON has done pump and treat in Louisiana. Just
25 not with RO; correct?

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1 A. Correct. And the technology and -- or
2 the methods that you're going for are the same.
3 So what -- you're trying to get water out of the
4 ground to a treatment train whether that's with
5 the liquid ring or submersible pumps, and once you
6 get it through the -- to the treatment train, you
7 buy that from a manufacturer designed specifically
8 to achieve certain remedial goals of what you're
9 looking to treat. So, I mean, whether you're
10 running it through an RO unit or as this shows --
11 that's actually on one of our UST sites. You
12 know, it's got a oil-water separator and an air
13 stripper with an SVE blower. The concept is very
14 similar.

15 Q. So this is an example of an actual
16 groundwater remediation project that ICON, your
17 company, did in Louisiana?

18 A. Correct. That's actually in Kentwood.
19 That's one that we installed a couple of years
20 ago. That's a high-flow system. It's doing about
21 3 million gallons a year.

22 Q. So no RO, but it's the same treatment
23 train and the same concept; true?

24 A. Well, it's not the same treatment train,
25 but it's the same concept of trying to get water

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1 to the treatment train for it to be treated and
2 then cleaned and discharged.

3 Q. Correct.

4 PANELIST OLIVIER: I do have one question.

5 THE WITNESS: Yes, sir.

6 PANELIST OLIVIER: This is Stephen Olivier.

7 As I was listening to you talking about how,
8 you know, this system would work for recovery
9 and treatment and then you were talking more
10 about discharge. And so to your knowledge,
11 has anybody from ICON consulted with DEQ, and
12 I asked -- I say DEQ because I think we know
13 DEQ has regulatory authority over any kind of
14 discharge operations in Louisiana.

15 So has anybody seeked with DEQ to see if
16 they would approve or how -- what their
17 decision would be for discharging treated
18 water that could be potentially impacted by
19 oil and gas operations?

20 THE WITNESS: So what they would do is they
21 would treat it just like our UST systems so
22 that -- they have specific discharge
23 requirements they make you sample. For us,
24 when we start our systems up, we're going to
25 have to sample every week, and they base your

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1 sampling on the constituents that you're
2 running through the system. So a lot -- if
3 you look through the DEQ, they've got
4 discharge requirements in certain streams.
5 They might have a chloride of like 60 or --
6 we'd have to meet those standards before we
7 could discharge any water, but I haven't
8 contacted anybody specifically for this site.

9 PANELIST OLIVIER: Do you have any experience
10 in the past or know of any other cases where
11 DEQ has approved the discharge of treated
12 water that was impacted by exploration and
13 production operations?

14 THE WITNESS: With chloride specifically?

15 PANELIST OLIVIER: Yes.

16 THE WITNESS: As you heard Mr. Angle testify
17 to, there hasn't been many chloride
18 remediation projects in Louisiana. So I have
19 not heard of any DEQ approval of that.

20 PANELIST OLIVIER: Okay. Okay. And, also,
21 while we're at it too, one question. It was
22 going back to the -- I think I heard from
23 other testimony that it was 471 recovery
24 wells that was proposed that could be
25 installed, and I think that Mr. Delmar may

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1 have kind of -- I think he touched on this
2 question with some other witnesses already,
3 but in your experience do you feel like there
4 would be any potential maybe subsidence or
5 any kind of issues on a property that you
6 could foresee with that many wells in a
7 recovery system?

8 THE WITNESS: That would have been a better
9 question for Mr. Miller, but we did have this
10 conversation a few days ago, and I'll try to
11 explain it kind of how he explained it to me.
12 He said that the upper zones are not under
13 that much pressure to where you have to worry
14 about subsidence, is the deeper areas to
15 where it's more -- the fluid is actually
16 pressurized. So when you're removing the
17 pressurized liquid, then the -- everything
18 actually compresses. So he thinks that the
19 top zone is not pressurized enough to worry
20 about subsidence in this case.

21 And like I said before, this system --
22 we're looking to recover about
23 3 million gallons a year. The system that
24 we've got up on the screen, we've been
25 running it for two years, and we've recovered

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1 about 6 million gallons. And, I mean, it's
2 in a much smaller area that -- this is spread
3 out over 80 acres. This site is -- I think
4 it's about an acre and a half, and we haven't
5 noticed any concrete cracking or anything
6 like that.

7 PANELIST OLIVIER: So on this specific one on
8 the Henning property, do y'all anticipate
9 putting anything on the property to monitor
10 for subsidence issues while y'all are in
11 operation?

12 THE WITNESS: I mean, we didn't have that in
13 the plan to do so, but, I mean, that's
14 something that could be easily added if
15 needed.

16 PANELIST OLIVIER: Okay. All right. Thank
17 you. That was all the questions that I had.

18 BY MR. KEATING:

19 Q. Mr. Sills, you agree with me that if
20 reverse osmosis is not used as part of your
21 process, your costs are going to go up; right?

22 A. Are you talking about, like, recovery
23 and then just hauling off site?

24 Q. You've got to haul the solids off;
25 right?

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1 A. Well, you're going to have to haul all
2 the volume off because, with a reverse osmosis,
3 what you're doing is basically shrinking your
4 volume. So you're actually winding up with a more
5 super concentrated fluid. For instance, the
6 brackish system is a 50-50 system. So for every 2
7 gallons you send through it, you get a gallon
8 clean, a gallon that's super concentrated. So
9 it's a volume-reduction system.

10 Q. You're reducing the volume of the water
11 that's going to have to be taken off site; true?

12 A. Taken off site or injected, yes.

13 Q. Or injected. And by doing that, you're
14 reducing the costs, are you not?

15 A. Well, if you had to take everything off
16 site, then you would have more volume to deal
17 with. So, therefore, yes.

18 Q. This is an example of the pump?

19 A. Well, this is an example of the well
20 box. So this is basically just to show everything
21 that is completed underground. The little hose
22 that you see that's kind of a white and gray is
23 actually coming from the submersible pump that's
24 removing the water to the system.

25 Q. Okay. And this just shows what?

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1 A. This just shows there's a piping
2 underground. So you'll have the recovery piping,
3 and then the smaller one is actually going to be
4 your electrical for your submersible pump.

5 Q. Let's talk about this a little bit, and
6 Mr. Miller testified about it already as well.

7 But for your part, what was your
8 contribution to the groundwater remediation area?
9 Mr. Miller determined this plume shape; correct?

10 A. Yes. He determined the plume shape. He
11 divided all of the different sections within the
12 plume. He came up with the thickness with the
13 hydraulic conductivity of each. I think he called
14 them zones.

15 Q. So he determined the vertical and
16 horizontal extent of the groundwater
17 contamination; right?

18 A. Correct.

19 Q. And you then applied the Theis equation;
20 correct?

21 A. Correct.

22 Q. And pore volume flushing; right?

23 A. That's correct.

24 Q. These are scientifically proven and
25 accepted methods of doing that, are they not?

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1 A. Yes.

2 Q. It's something you've done before;
3 right?

4 A. Correct.

5 Q. This is something -- using your
6 calculation methods, Theis and pore volume
7 flushing are methods you've utilized on
8 groundwater remediation plans where ICON actually
9 went out and did the groundwater remediation;
10 right?

11 A. Yes.

12 Q. And it worked?

13 A. They were fairly close.

14 Q. Okay. We're not in a perfect world;
15 right?

16 A. Right.

17 Q. You successfully remediated the
18 groundwater?

19 A. Yes.

20 Q. And so your methodology is not only
21 scientifically proven, it's practically proven?

22 A. Yes.

23 Q. Let's talk about the cost estimates.

24 MR. KEATING: Scott, can you zoom in on the
25 chart?

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1 BY MR. KEATING:

2 Q. And this is a summary for the Chapter 6
3 required plan, the plan with no depth limitations
4 for the soil.

5 So we've got at the top -- we've got two
6 columns, one for off-site disposal of the
7 concentrated retentate you talked about and one
8 for on-site injection; right?

9 A. That's correct.

10 Q. But for soil it's the same, obviously;
11 correct?

12 A. Correct. For both.

13 Q. And what's your soil cost estimate for
14 Option 1 with no depth limitations?

15 A. It's basically \$2.3 million.

16 Q. And, again, you're not recommending to
17 the panel that that's what should be done. That's
18 required by Chapter 6, to include it in your plan?

19 A. Correct.

20 Q. With the groundwater -- well, let me
21 back up.

22 All the cost estimates for the soil and
23 groundwater -- excuse me.

24 All of the backup documentation for
25 these cost estimates is included as part of ICON's

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1 MFP; right?

2 A. That's correct.

3 Q. And that's Exhibit E in the record;
4 right?

5 A. Yes.

6 Q. I understand Mr. Wayne Prejean with ICON
7 did more of the legwork, if you will, to gather
8 and assimilate these costs; is that fair?

9 A. Yes.

10 Q. That's something you also sometimes do
11 with ICON; right?

12 A. Yes.

13 Q. Did you review and, for your purposes,
14 validate Mr. Prejean's estimates and calculations?

15 A. Yes. Everything looked correct to me.

16 Q. Okay. Are you familiar with what
17 Mr. Prejean did to assemble these costs?

18 A. Yes. We have Excel worksheets used
19 to -- I mean, pretty much we use those for every
20 case to generate these costs for our soil and
21 groundwater areas.

22 Q. And you're getting the backup
23 documentation from actual contractors and vendors
24 and so on?

25 A. It's a combination. Sometimes we use

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1 trust fund rates, which are state-approved rates.
2 We use the RSMeans book, which I know the DNR
3 recommends for closing the E&P facilities. We use
4 Pure Aqua sometimes. Depending on what landfill
5 we go to, we'll have a quote from them. So it
6 just varies depending on what aspect of the
7 technology we're dealing with.

8 Q. Okay.

9 MR. KEATING: Scott, would you mind zooming
10 on this?

11 BY MR. KEATING:

12 Q. This is the cost summary plan for --
13 with the depth exceptions; right? That, for the
14 soil this, is what you're actually recommending
15 for the panel to accept; right?

16 A. That's correct.

17 Q. And the costs for the soil is just over
18 a million dollars in this option; true?

19 A. That is correct.

20 Q. You've seen soil remediations far
21 exceeding this in cases like this; true?

22 A. This is very small. Yes.

23 Q. So looking at the groundwater
24 remediation costs, which -- we, I think,
25 established this earlier, but if we didn't, it's

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1 the same from Option 1 to Option 2; fair?

2 A. Yes.

3 Q. Looking back to the groundwater
4 remediation areas, we see you have it separated by
5 A bed and B bed, and Mr. Miller talked about that
6 plenty yesterday. So we're not going to rehash
7 that, but you then have the A through K areas.

8 So when we go back to your cost
9 estimate --

10 MR. KEATING: Zoom in, Scott, please.

11 BY MR. KEATING:

12 Q. -- you have them separated to try to be
13 more accurate; right?

14 A. Yeah. So we have them separated out in
15 A bed and B bed and then also by zone. So you can
16 kind of see the cost for each zone and by the bed,
17 and then we have the capital costs for our RO unit
18 along with our capital cost and installation of
19 the SWD.

20 Q. In the RO unit, both the seawater and
21 brackish together is about \$750,000; right?

22 A. Yes.

23 Q. So it's less than 10 percent of your
24 groundwater remediation plan; right?

25 A. Yes.

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1 Q. This RO system that they're making a big
2 deal about?

3 A. Correct.

4 Q. And it's going to reduce the amount of
5 volume that has to be either injected on-site or
6 hauled off-site; right?

7 A. That's correct. Because if you go to
8 just do a direct recovery and injection into an
9 SWD -- I mean, Mr. Miller talked about it
10 yesterday -- you're going to have to have some
11 blending. So you're actually going to increase
12 your volume and make it even more.

13 PANELIST OLIVIER: I do have one more
14 question. It's Stephen Olivier. Earlier, we
15 were talking about potentially discharging
16 some of the treated water, and I just see
17 here because y'all have injection and so --
18 and I heard him just say that you could
19 either inject it or haul it off-site. And so
20 is that -- the three options of this system
21 is to discharge it, inject it, or haul it
22 off, and you-all would maybe pick one of
23 those options, or would you -- would it
24 incorporate all three? How would that work?

25 THE WITNESS: Okay. It would be a

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1 combination of two. So when -- how the
2 system works is, like I said, you'll get
3 freshwater out. So you've got to discharge
4 the freshwater somewhere, and usually it's
5 through an LPDS, and that will be, like you
6 were asking, through the DEQ.

7 The other option is -- and why we
8 usually do it -- and this is a rare site --
9 is it's usually cheaper to inject the super
10 retentate on-site instead of hauling it to a
11 disposal facility. This is one of the rare
12 cases that it's actually more expensive by
13 our estimate to inject it on-site than haul
14 it off. I just wanted to give different
15 options to show that we were looking at just
16 more than one scenario.

17 PANELIST OLIVIER: Okay. And I guess -- and,
18 of course, I don't know the outcome, but if
19 ICON were to contact DEQ -- and let's just
20 say you weren't able to get permission or a
21 permit or whatever they would issue you to be
22 able to discharge this water. Would then
23 y'all just haul it out -- that freshwater off
24 at -- with everything else?

25 THE WITNESS: To be honest -- I mean, I

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1 couldn't see a scenario where they would
2 decline it, but let's say, worst case
3 scenario, that they did. Then you would have
4 to haul off the entire volume.

5 PANELIST OLIVIER: And do y'all have a cost
6 included that would incorporate hauling all
7 of it off versus the discharge?

8 THE WITNESS: No, we do not.

9 PANELIST OLIVIER: Okay.

10 THE WITNESS: Because like I said, I mean,
11 it's freshwater, and a lot of these systems
12 are used to make drinking water. So they
13 have the LPDS, you know, guidelines about
14 what you're allowed to discharge, and we run
15 other systems at tank sites that they -- I
16 just -- I couldn't see them declining it, but
17 like I said, they could. And if they do,
18 worst case, we'd have to haul everything off.

19 PANELIST OLIVIER: Okay. So do you have
20 anywhere where you estimated how much water
21 would be discharged? That way, in the event
22 that if you were to have to have that
23 alternative option, you would be able to
24 provide a cost based on the amount? So do
25 you have like a -- I guess some kind of

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1 estimate on how much that would be fluid-wise
2 for discharge?

3 THE WITNESS: Yeah. So what we estimated to
4 inject would be about 1100 barrels a day, and
5 I think the discharge of freshwater -- we
6 were estimating somewhere around 1200 barrels
7 a day.

8 PANELIST OLIVIER: And that would be seven
9 days a week through the duration of your
10 estimated --

11 THE WITNESS: Correct. 365. As long as the
12 system was up and running, that's what we
13 were calculating to produce. And so, I mean,
14 2300 barrels a day total.

15 PANELIST OLIVIER: Okay. All right. Thank
16 you. That's all the questions I had.

17 BY MR. KEATING:

18 Q. Going back, Mr. Sills, to your
19 estimates, you've got a -- I want to talk to you
20 about a couple of things in particular.

21 The saltwater disposal capital and O and
22 M costs for the on-site injection of the retentate
23 option, where did you get that figure, or where
24 did ICON get that figure?

25 A. That's from Mr. Charles Norman.

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1 Q. Okay. And did you ask Mr. Norman about
2 this?

3 A. I did. I asked him -- because, you
4 know, I know it's a little elevated, and he said
5 it was just on his design specification. He likes
6 to use certain metals in his system to provide, I
7 guess, less downtime in having to do O and M on
8 it. So he designs it the way he designs it.

9 Q. So the last thing we want to have is an
10 inadequate SWD and just cause more problems when
11 we're trying to fix problems, and that's why
12 you're being overly cautious with Mr. Norman on
13 this?

14 A. Correct. You don't want to inject your
15 fluid and then causing other problems because
16 you've got it breaching to the surface or
17 something in that aspect.

18 Q. A few more questions, Mr. Sills, and
19 then I'll be finished.

20 You believe the soil remediation cost
21 that ICON is proposing here to be reasonable?

22 A. I believe them to be very conservative.

23 Q. And have you compared ICON's soil
24 remediation costs and its -- the option it's
25 actually recommending, the million-dollar option

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1 for the 0.1 percent surface area of the property,
2 to what ERM has in its hypothetical plan?

3 A. Well, what I did was I compared the one
4 without exceptions because our volumes were more
5 close to mirror each other, and their plan was
6 more expensive than ours.

7 Q. So your plan -- your 29-B Chapter 6 plan
8 with no exceptions that was submitted is less than
9 ERM's hypothetical plan?

10 A. That's correct.

11 Q. And, Mr. Sills, you believe the
12 groundwater remediation costs, the calculations
13 that you ran that we talked about using Theis,
14 using pore volume flushing to calculate time,
15 calculate -- and the yield Mr. Miller provided and
16 your quotes on the RO system -- all of that is
17 accurate and reasonable?

18 A. Yes.

19 Q. And let's just summarize for the panel
20 here and get this knocked out.

21 To summarize your opinions, Mr. Sills,
22 first, it's your opinion that both the soil and
23 the groundwater on the Henning property are
24 contaminated with E&P waste from -- above
25 thresholds in those regulations?

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1 A. Correct.

2 Q. And, second, it's your opinion that for
3 the soil, it needs to be excavated in the areas
4 where we have EC above 4 down to about 12 feet;
5 right?

6 A. That's correct.

7 Q. And that's roughly 1.2 acres?

8 A. That's correct.

9 Q. Mr. Sills, you heard a lot about rooting
10 depth and different crops, different plans,
11 different trees. You're not a soil agronomist,
12 are you?

13 A. No, I'm not.

14 Q. However, that's something that you've
15 looked at, relied upon, you have in your knowledge
16 from your years of doing this; correct?

17 A. Correct. We review a lot of
18 publications dealing with that.

19 Q. In fact, I have a whole stack of them
20 over here that we went through; right?

21 A. Yes.

22 Q. And that's something that's just in your
23 knowledge; correct?

24 A. Correct. And then Mr. Miller is pretty
25 heavily into it. So we talk about it all the

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1 time.

2 Q. And you and Mr. Miller specifically
3 discussed fate and transport?

4 A. Correct. The water that's drawn up from
5 deeper.

6 Q. And I'm not asking to comment on fate
7 and transport. That's Mr. Miller's area. But you
8 understand that the rooting depth for sugarcane
9 has been found to be as deep as 8 feet in these
10 publications?

11 MR. CARTER: Your Honor, this witness isn't
12 qualified as an expert on rooting depths.

13 MR. KEATING: Your Honor, he's developed the
14 soil remediation plan in conjunction with a
15 hydrogeologist that is a supreme expert in
16 fate and transport, and he's relying on the
17 same published studies that Mr. Ritchie
18 talked about.

19 JUDGE PERRAULT: Just explain the plan
20 without him going into any expertise in
21 rooting depth.

22 MR. KEATING: Fair enough.

23 BY MR. KEATING:

24 Q. You're not qualified to talk about or
25 validate these, but you -- in your practice you're

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1 aware there are publications. You've seen them.
2 You have them that show rooting depths far deeper
3 than what Mr. Richie talked about?

4 A. Right. In designing and coming up with
5 this soil remediation plan, I didn't have
6 anything -- any one thing specific in mind. I
7 just wanted to make it to where whatever the
8 future use or whatever the future owners wanted to
9 use the property for, they could.

10 Q. So if it's rice, if it's sugarcane, if
11 it's soybeans, if it's oak trees, pine trees, you
12 determined that 12 feet was a safe, conservative
13 depth for whatever Mr. Henning, his kids, his
14 grandkids, or some new owner down the road may
15 want to do in the dirt?

16 A. That's correct.

17 Q. And that's why you went down to 12 feet?

18 A. That's correct.

19 Q. And I don't think there's any dispute
20 that, when you get to above a 4 in EC, it can
21 cause problems for these -- this vegetation, these
22 trees, and so the only areas you're saying to
23 excavate are where we have that EC above 4; right?

24 A. Right.

25 Q. Third, it's your opinion that based on

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1 all the information Mr. Miller provided, the
2 groundwater needs to be remediated; right?

3 A. That's correct.

4 Q. And you believe that ICON's methodology
5 that we just went through for both the soil and
6 the groundwater is accepted and it's
7 scientifically proven?

8 A. Yes.

9 Q. And it's been done in practice and
10 worked; right?

11 A. To my knowledge, yes.

12 Q. And you think it's feasible to do it
13 this way because you've actually done the work
14 before; right?

15 A. I've done pump and treats before, yes.

16 Q. And you've done soil excavation. You've
17 done soil amendments?

18 A. Right.

19 Q. And it worked?

20 A. Right. In the aspect that I did it.

21 Q. Ultimately, Mr. Sills, it is your strong
22 opinion that ICON's proposed remediation plan that
23 we just went through is the most feasible plan to
24 address the contamination on the Henning property?

25 A. Correct. If your plan is to meet, you

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1 know, background regulations for groundwater and
2 any future use for the property for any planting
3 purposes, yes.

4 MR. KEATING: Pass the witness.

5 JUDGE PERRAULT: Before you go, what exhibit
6 did you offer for the risumi?

7 MR. KEATING: It's part of Exhibit E, which
8 is already in evidence. It's just an
9 appendix. I just wanted the panel to know
10 where it was if they wanted to look.

11 JUDGE PERRAULT: It's all right. Okay. Do
12 we have any cross?

13 MR. CARTER: Yes, Your Honor.

14 CROSS-EXAMINATION

15 BY MR. CARTER:

16 Q. Mr. Sills, good to see you again.
17 Johnny Carter, counsel for Chevron.

18 Mr. Sills, ICON started working on this
19 Henning matter in October 2019; is that correct or
20 thereabouts?

21 A. That sounds about right.

22 Q. In fact, ICON has logbooks attached with
23 its Exhibit E, its most feasible plan, that show
24 the record of what folks have done on-site at the
25 Henning property; correct?

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1 A. That's correct.

2 Q. And I went back and looked at it. It
3 looked like the first time out there was
4 October 28th, 2019. Does that sound about right
5 to you?

6 A. I remember it was 2019, but I'll take
7 your word on October.

8 Q. Now, you were not there at that time;
9 correct? You didn't go out to that site; right?

10 A. No. They don't let me out in the field
11 too often.

12 Q. Okay. You're part of the three-man team
13 that kind of runs ICON's projects; right?

14 A. Correct. I pretty much handle all of
15 our scheduling and field work that has to do with
16 legacy work.

17 Q. And that was the case in October of
18 2019; right?

19 A. That's the case, yes.

20 Q. And you did not go out there in October
21 of 2019; right?

22 A. No.

23 Q. ICON submitted its most feasible plan to
24 LDNR in October of 2022; right?

25 A. That's correct.

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1 Q. So that's three years later; right?

2 A. Yes.

3 Q. By October of 2022, you still had never
4 been to the Henning property; is that correct?

5 A. No, I have not.

6 Q. Have you ever been to the Henning
7 property?

8 A. No.

9 Q. You work here in Baton Rouge; right?

10 A. In Port Allen, yes.

11 Q. I mean, to understand kind of the lay of
12 the land, you know where the Henning property is;
13 right? You've seen it on maps and Google images
14 and the like?

15 A. Correct.

16 Q. And you'd have to drive from Baton Rouge
17 west to Jennings and then through a bunch of rural
18 areas about 30 miles west of Jennings to even get
19 to this site; right?

20 A. Right. South of Hayes.

21 Q. South of Hayes. Hayes is a little town
22 of about 600 people; right? But you have to drive
23 through a lot of countryside to get to this
24 property; correct?

25 A. Yes.

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1 Q. Same if you were coming from the other
2 direction. You know, we've got some Houston folks
3 who are involved in this; right? If you come
4 to -- from Houston and you go through Lake
5 Charles, then you drive through a lot of
6 countryside, a lot of rural area, 30 miles of it,
7 before you would get to this property; correct?

8 A. Yes.

9 Q. Now, you've never testified in an LDNR
10 hearing before; correct?

11 A. No, I have not.

12 Q. You are not a licensed professional
13 engineer; correct?

14 A. No, I'm not.

15 Q. And you are not a toxicologist; correct?

16 A. No.

17 Q. Now, you've testified a little bit about
18 ICON's groundwater removal plan, and is it fair to
19 say that ICON has one groundwater removal plan
20 with two different disposal options?

21 A. I would say that's fair.

22 Q. Okay. One ICON plan has off-site
23 disposal of water, and then the other requires
24 installation of two saltwater disposal wells.
25 Those are the two options; right?

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1 A. Yes.

2 Q. The cost for each saltwater disposal
3 well is a little more than \$3 million per
4 saltwater disposal well?

5 A. That's correct.

6 Q. Okay. One of the saltwater disposal
7 wells is a backup in case the other one goes down;
8 is that right?

9 A. That is correct.

10 Q. And you're not aware of whether anyone
11 has studied whether there is a reservoir capable
12 of receiving this quantity of water that would be
13 generated; correct?

14 A. Like I said, I had a brief discussion
15 with Mr. Norman. I don't know if he did a
16 specific analysis of that -- of the reservoir, but
17 I guess he seems to think it's possible. But, no,
18 I don't know of any specific analysis he's done on
19 the injection reservoir.

20 Q. If he did a specific analysis of the
21 injection reservoir, it's not in ICON's most
22 feasible plan; right?

23 A. That is correct.

24 Q. I mean, ICON's most feasible plan does
25 have all sorts of information about costs and how

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1 costs were compiled, but there's nothing in there
2 about these saltwater disposal well estimates;
3 correct?

4 A. That's correct.

5 Q. You've also not identified a location
6 for the saltwater disposal wells?

7 A. No, I have not.

8 Q. The only information you have about the
9 saltwater disposal well cost is just Charles
10 Norman told you something on the phone; correct?

11 A. Correct.

12 Q. ICON's groundwater remediation plan, I
13 think we've already talked about. It requires
14 installing 471 recovery wells; right?

15 A. That's correct.

16 Q. That's 471 wells over 85 acres; correct?

17 A. That's correct.

18 Q. I think you said already and testified
19 already that's about six wells per acre; right?

20 A. Yes.

21 Q. ICON's plan calls for separate recovery
22 wells for the A bed and the B bed; right?

23 A. That is correct.

24 Q. There are no recovery wells in ICON's
25 plan that are intended to recover water from both

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1 beds; right?

2 A. No. Because when Mr. Miller ran the
3 analysis, he was concerned about preferential
4 flow, which means getting more flow from the B
5 than the A bed, and basically you're going to be
6 spinning your wheels at that point, recovering
7 most of your water from the B bed and very little
8 from the A bed.

9 Q. The well count, the 471 wells, that
10 number, is largely driven by the yield in the
11 A bed because the B bed is going to have a lot
12 fewer wells. The total count is driven by the
13 yield in the A bed; right?

14 A. That's correct. I would probably say 60
15 to 70 percent, maybe slightly higher, are in the A
16 bed.

17 Q. Actually, isn't it 467 of the 471 wells
18 are in the A bed?

19 A. Then it's more.

20 Q. I mean, it's more than 99 percent;
21 right?

22 A. Right. I figure that, you know, most of
23 them were in the A bed, but as I sit here today,
24 I'm sorry. I can't remember exactly the number in
25 each.

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1 Q. ICON is proposing four wells for the
2 B bed; right?

3 A. Right. I think it's -- well, I thought
4 it was five because I thought it was three in one
5 area and two in the other.

6 Q. Four or five, something like that, and
7 the remainder are for the A bed; correct?

8 A. Yeah. I think that's correct, but I'd
9 have to go back and review to look at the exact
10 number. But I know there was a lot more in the
11 A bed than the B bed.

12 Q. ICON's report includes cost estimate
13 summaries, and you looked at some of those with
14 Mr. Keating broken out by beds and zones; right?

15 A. Yes.

16 Q. So let's take a look at Exhibit E, which
17 is the ICON most feasible plan. We'll put it up
18 on the screen, and we'll look at those cost
19 summaries, specifically page E 18.

20 And you see those cost summaries on this
21 page, that there is a number of different rows
22 here for the groundwater remediation for different
23 zones and beds; correct?

24 A. Yes.

25 Q. All right. And ICON determined the

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1 number of wells in this plan for each of these
2 different zones and beds for groundwater
3 remediation; correct?

4 A. I'm sorry. We determined the number of
5 wells in the groundwater?

6 Q. Yes.

7 A. Yes.

8 Q. Right. These cost estimates are based
9 upon a calculation of a number of wells?

10 A. That's correct.

11 Q. And you prepared spreadsheets that
12 calculated the predicted drawdown versus the
13 distance from the pumping well, correct?

14 A. That's correct.

15 Q. All right. And those are known as the
16 Theis sheets?

17 A. That's correct.

18 Q. All right. So let's look at an example
19 of a Theis sheet, and that's at E 1400, and you
20 see on this -- at the top it says the calculation
21 of predicted drawdown versus distance from pumping
22 well?

23 A. Yes.

24 Q. Okay. So this is one of the
25 spreadsheets you testified a little bit in --

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1 about in response to Mr. Keating's questions;
2 right?

3 A. That's correct.

4 Q. And the other one -- let's take a look
5 at the other one real quick -- is the pore volume
6 flushing analysis. You also did those; right?

7 A. Yes.

8 Q. There's one of those at E 1359. This is
9 an example of a pore volume flushing analysis; is
10 that right?

11 A. That's correct.

12 Q. So the two that I've shown you, the
13 Theis sheet and the pore volume flushing analysis,
14 have to do with Zone I, Bed A, and so just as --
15 we're going to pick one of these as an example to
16 kind of talk about the work that you did.

17 So if we look back at the groundwater
18 cost estimates, page 18, do you see Zone I, Bed A?
19 It's kind of about halfway down.

20 A. Yes.

21 Q. Okay. And so that accounts for
22 \$3,272,199 of the cost estimate for off-site
23 disposal of retentate from reverse osmosis;
24 correct?

25 A. Yes.

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1 Q. And it accounts for 2,839,158 of the
2 on-site injection of retentate from reverse
3 osmosis; right?

4 A. That's correct.

5 Q. Now, do you agree with Mr. Miller's
6 testimony yesterday that ICON was trying to be
7 efficient in extraction of chlorides?

8 A. Well, yes.

9 Q. And you applied the same methodology in
10 terms of calculating the number of wells for
11 Zone I using those spreadsheets that you applied
12 for the other zones. You didn't do anything
13 different with Zone I than you did for any of the
14 other zones; right?

15 A. No. They should all be consistent.

16 Q. Now, you looked with Mr. Keating at a
17 map of the groundwater remediation area zones, and
18 I'd like to look at that with you for a second as
19 well.

20 A. Okay.

21 Q. And so if we go in Exhibit E to E 57 --
22 and we look here at the figure -- you recognize
23 Figure 25 of ICON's report; right?

24 A. Yes, sir.

25 Q. Do you see where Zone I is here? It's

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1 this shape that kind of comes up here but then it
2 goes down here and then around there?

3 A. Right.

4 Q. So that's Zone I that we're -- well,
5 we'll see if we can get the boundaries on it
6 there. Something like that; right?

7 A. Yes, sir.

8 Q. So that is -- Zone I is east of Limited
9 Admission Area 4; right?

10 A. Yes.

11 Q. And it is east of Limited Admission
12 Area 5; right?

13 A. Yes.

14 Q. And it is largely west of Limited
15 Admission Area 6. Do you see that?

16 A. Yes. Some of the limited admission
17 Area 6 looks to be included.

18 Q. Right. There's a little bit of 6 and a
19 little bit of -- just a little bit of 5 and maybe
20 a little bit of 4 that are in Zone I, but the
21 great majority of Zone I is not in a limited
22 admission area?

23 A. That's correct.

24 Q. Now, in Zone I -- if we can kind of look
25 over here to the right, you provide some

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1 additional information about Zone I here on
2 figure 25; correct?

3 A. Yes.

4 Q. And in Zone I, there are -- the B bed
5 wasn't -- the core sampling didn't even penetrate
6 to the B bed in the north portion of Zone I;
7 right?

8 A. That's correct.

9 Q. So there's no data about a B bed in at
10 least half of Zone I; correct?

11 A. That's what our additional assessment
12 cost is going to include, is the additional
13 assessment of Zone I.

14 Q. Zone I is 21.34 acres; right?

15 A. Yes.

16 Q. So now that we've looked at where Zone I
17 is, let's go to the calculation of the predicted
18 drawdown spreadsheet versus the distance from the
19 pumping well. For Zone I bed A -- so that's back
20 at E 14, I believe.

21 A. Okay.

22 Q. So on this spreadsheet, you have a rate;
23 right? An extraction rate or a pumping rate? The
24 GPM.

25 A. That's correct.

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1 Q. So for Zone I -- the wells in Zone I
2 under ICON's plan will pump 0.1 gallons per
3 minute; right?

4 A. That's correct.

5 Q. That is 6 gallons per hour; right?

6 A. Yes.

7 Q. And that's 144 gallons per day?

8 A. That's correct. Right.

9 Q. Each well in Zone I from the A bed will
10 drain a radius of 30 feet; right?

11 A. Yes.

12 Q. Which I calculate as being approximately
13 28 square -- 2800 square feet for each recovery
14 well. Does that sound about right to you? Pi R
15 squared?

16 A. Yeah.

17 Q. Now, let's go to the other spreadsheet,
18 the pore volume flushing spreadsheet for Zone I,
19 Bed A. Now, on this one, again we're going to see
20 the 0.1 aquifer pumping rate for a single well.
21 That's the 144 gallons per day; right?

22 A. Yes.

23 Q. And the number of recovery wells that
24 you calculated for just this zone is 185 -- 185
25 wells for Zone I; right?

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1 A. Yes.

2 Q. ICON's remedial plan for groundwater
3 proposes installation of 185 recovery wells on the
4 21.3 acres of Zone I; right?

5 A. Yes.

6 Q. That is about nine wells per acre for
7 this zone; right?

8 A. Give or take, yes.

9 Q. The time to reach the remedial target at
10 the bottom is a half year for Zone I, right?

11 A. That's correct.

12 Q. Now, let's look at ICON's cost for
13 groundwater recovery spreadsheet for Zone I, which
14 is, I think, the next page, 1360.

15 So ICON calculates that it will take 370
16 days to install the 185 recovery wells in Zone I;
17 correct?

18 A. That's correct.

19 Q. So it will take more than a year to
20 install the entire recovery well system for just
21 Zone I because we've just been looking at one zone
22 here; right?

23 A. That's correct.

24 Q. Now, there's some times of the year when
25 it will be difficult to install wells due to the

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1 conditions on the property; right?

2 A. That's correct.

3 Q. ICON had to use Marsh Masters out on
4 this property on occasion; right?

5 A. I think both us and ERM used Marsh
6 Masters.

7 Q. Right. And you agree with Mr. Miller's
8 testimony yesterday that a Marsh Master has a
9 limited depth capacity?

10 A. Correct.

11 Q. ICON does not have a drilling rig that
12 could install recovery wells with the Marsh
13 Master; right?

14 A. I don't think anybody has a drilling rig
15 that can recover -- I mean that can install wells
16 with a Marsh Master, but they have tracked
17 Rotosonic rigs --

18 Q. Right.

19 A. -- that we would subcontract out when
20 we -- that's what we normally do when we have
21 larger diameter wells that we're installing.

22 Q. So if we look at this rate of two days
23 for installation of a recovery well, that's not
24 any different in Zone 9 than it is in any other
25 zones; right?

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1 A. No. That sounds pretty accurate.

2 Q. So if we look at the entire site with
3 two days per well -- 471 wells -- that's 942 days
4 of drilling recovery wells; right?

5 A. Yes.

6 Q. It's about two years and seven months
7 just of drilling recovery wells; right?

8 A. Correct. Because you're talking about
9 80-something acres that you're having to
10 remediate. I mean, if we were talking about half
11 an acre that you had to remediate, then I could
12 say 400 days is a long time, but this is way
13 bigger than what a normal gasoline station would
14 be.

15 Q. Which is most of your actual remediation
16 experience; right, sir?

17 A. I mean, I've done remediation in
18 different aspects other than gasoline stations,
19 but, I mean, the technology to remediate
20 groundwater is basically the same.

21 Q. Most gas stations are accessible by
22 trucks driving on concrete. They're not out there
23 in the marsh; right, sir?

24 A. Yes.

25 Q. Okay. Now, if you take the 942 days,

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1 there are going to be some days where there's a
2 downpour or there's a hurricane or the trucks have
3 broken down. And there's also going to be
4 holidays, and there's going to be Christmas.
5 You're probably talking more than three years just
6 installing recovery wells; right?

7 A. That's correct.

8 Q. Now, let's look at a slide from your
9 PowerPoint that you went through with Mr. Keating,
10 which is page 19 of that PowerPoint.

11 So do you recall testifying about the
12 groundwater remediation plan, page 19 in your
13 PowerPoint?

14 A. Yes, I do.

15 Q. And you testified about how there would
16 be installation and sampling, pilot testing, and
17 fine-tuning as part of Phase 1?

18 A. Yes.

19 Q. Okay. And then you'd go into Phase 2?

20 A. That's correct.

21 Q. How long would that installation,
22 sampling, pilot testing, fine-tuning -- how long
23 is that going to take?

24 A. I mean, as you pointed out, it's going
25 to be a couple years just to get all the wells in.

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1 Q. So it's going to be two or more years in
2 Phase 1, and then you would go to Phase 2; is that
3 right?

4 A. That's correct.

5 Q. And then how do these numbers relate to
6 each other in Phase 2? Is the Phase 2 going to
7 take 12.1 years, or is it going to take some
8 amount more or less than that? I don't know how
9 to pool all those together.

10 A. Most of that's going to be running
11 concurrently, which means the -- both the A bed
12 and B bed will be running at the same time. As I
13 mentioned before, we would be pulling more from
14 the southern areas to try to induce freshwater
15 flushing into the zone. So those are, you know,
16 the best estimates. As I explained it earlier,
17 that's perfect world estimates.

18 Q. Okay. Now, one of those estimates -- we
19 already looked at this on one of your
20 spreadsheets; right? It is the 0.5 years that it
21 will take for Zone I; right?

22 A. That's correct.

23 Q. And so for Zone I, there's going to be
24 this two- to three-year period of wells being
25 installed, including more than a year just

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1 specifically for Zone I, and then the system will
2 turn on. And then Zone I will be taken care of in
3 six months; right?

4 A. Yes.

5 Q. Okay. I have some questions for you
6 about ICON's soil remediation plans.

7 Let's take a look at Plaintiff's
8 Exhibit E, page E 60, which is the soil
9 remediation areas with no exceptions. And let's
10 kind of zoom in there. Now, first of all -- and I
11 think that -- well, yeah. I think you covered
12 this with Mr. Keating. You're not suggesting any
13 remediation or amendment in Area 6 or Area 8;
14 right?

15 A. That's correct. For 29-B constituents.

16 Q. Right. And for 29-B constituents, you
17 have area -- so the little pink boxes in Areas 2,
18 4, and 5; right?

19 A. That's correct.

20 Q. Okay. And so you have drawn boxes to
21 show locations of excavation or amendment where
22 you have found 29-B exceedances in the limited
23 admission areas; right?

24 A. That's correct.

25 Q. So you've found 29-B exceedances in an

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1 area of little more than an acre; right?

2 A. Correct. 1.2 acres.

3 Q. Okay. In its without exceptions plan,
4 ICON does not propose any excavation for removal
5 from the site of soil in the first 4 feet at any
6 place on the Henning property; correct?

7 A. No. It looks like amendment is the only
8 thing that's located in the top 4 feet.

9 Q. Right. There's an amendment area over
10 here kind of by H-12 where in the first zero to
11 6 feet, the plan calls for amendment; right? And
12 then in the other areas, we see some excavation,
13 but none of it is in the first 4 feet below the
14 surface?

15 A. You actually missed a spot in --

16 Q. I did? All right.

17 A. In Area 4. If you look at the north
18 one, I think that's H-21 that you see amend 2 to
19 8.

20 Q. Now, the amendment is going to be 2 to
21 8. The excavation is going to be 8 to 10?

22 A. Right. And that's -- what I stated
23 earlier is that we had some amendment in the top
24 4 feet but no excavation.

25 Q. Right. So in the sites where ICON is

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1 proposing excavation, what ICON is suggesting is
2 that the clean overburden of 4 feet or more will
3 be removed, stockpiled to the side, and then there
4 will be some excavation under that. And then the
5 clean overburden could be put back in the hole or
6 what have you; right?

7 A. Right. So whatever the thickness of the
8 clean overburden -- for instance, if we go to
9 H-21, we would excavate down to 2 feet, remove the
10 2 to 8, set it to the side for amendment, and then
11 excavate the 8 to 10 and have that for off-site
12 disposal.

13 Q. Right. But that top 0 to 2 feet,
14 perfectly fine, it can just go back in or be put
15 back, it's good to go; right?

16 A. Correct. We have no data in the top
17 2 feet that indicated that there was a 29-B
18 exceedance.

19 Q. Right. So the without exceptions
20 plan -- and you covered this a little bit with
21 Mr. Keating -- calls for excavation from 4 feet to
22 32 feet at H-16; right?

23 A. That's correct.

24 Q. All right. That is the location where
25 you've actually proposed going down -- well, where

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1 the without exceptions plan says go down to
2 32 feet. Although we'll get to the -- whether
3 that's recommended or not; right?

4 A. Yes.

5 Q. Okay. So that's an area that is a sixth
6 of an acre. It's 675 square meters; right?

7 A. Yes.

8 Q. So it's going to be a 32-foot depth --
9 deep excavation in a relatively small area; right?

10 A. That's correct.

11 Q. And you've never been involved in a soil
12 excavation down to 32 feet; right?

13 A. No, not to 32 feet. The deepest I've
14 went is a little over 20.

15 Q. Per your testimony today, ICON is not
16 recommending excavation to 32 feet; right?

17 A. No, we're not.

18 Q. Okay. Now, we talked about how you
19 looked at the limited admission areas and you
20 found the locations of 29-B exceedances. Just to
21 be clear, those are salt-based parameters; right?

22 A. Yes.

23 Q. Now, let's look a little bit at the with
24 exceptions plan and specifically go to page E 61.

25 As with the no exceptions plan, the with

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1 exceptions plan includes remediation at 2, 4, and
2 5 but not 6 and 8; right?

3 A. No. It's only Areas 4 and 5.

4 Q. Good point. All right.

5 So ICON's with exceptions plan, the one
6 that it is actually recommending, does not include
7 any soil remediation for Areas 2, 6, and 8; right?

8 A. That's correct.

9 Q. Okay. It does include again some small
10 areas where you found 29-B exceedances for
11 salt-based parameters in Areas 4 and 5; right?

12 A. That's correct.

13 Q. So the area -- the total area that is in
14 this with exceptions plan is even a little bit
15 less. The total area recommended for remediation
16 is even a little bit less than what is in the
17 without exceptions plan; right?

18 A. That's correct. Without exceptions was
19 1.27 acres, and this is 1.2 acres.

20 Q. Okay. So we talked a little bit
21 about -- or Mr. Keating talked with you about
22 H-16?

23 A. Yes.

24 Q. And that the excavated -- I think in the
25 report it says that the excavated area around

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1 boring H-16 will not be backfilled to allow for
2 ponding to flush the soils below the excavation.
3 Do you recall that?

4 A. Right. And like I said, to assist in
5 the remediation of everything.

6 Q. Okay. At H-16, ICON is proposing that
7 there be a hole dug of 18 feet and that it be left
8 open; right?

9 A. And a pond created for temporary, to
10 induce flushing to assist in the remediation of
11 the site.

12 Q. Did you hear Mr. Miller's testimony that
13 there's not any kind of modeling of what that --
14 how that flushing would work --

15 A. No.

16 Q. -- yesterday? Okay.
17 There isn't any; right?

18 A. No.

19 Q. There's no -- right.

20 You have no idea how long that flushing
21 might take; right?

22 A. Well, the flushing is not done to
23 achieve any remedial goal. It's just to assist.
24 As I stated previously, the leachate chloride
25 right below the 18 feet was at 11. Our -- I'm

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1 sorry. I misspoke. The EC right below 18 feet --
2 I mean is at 11, which is pretty close to our
3 10.8. So we wouldn't really need any assistance
4 in remediation. It's just there to assist in our
5 groundwater recovery. It's not meant to achieve
6 any remedial goal. So to model what flushing may
7 or may not occur is just going to be a bonus for
8 us.

9 Q. But you don't dispute that ICON'S plan
10 said that the purpose of leaving open that
11 excavation was to flush the soils underneath;
12 right?

13 A. Right. It was to help flush the
14 residuals, but it's not -- the goal we were trying
15 to meet was to an EC of 10.8. I think it's 10.3,
16 and it was already at 11.

17 Q. And this flushing, by the way, is --
18 this is also down into the so-called A bed; right?

19 A. Yes.

20 Q. This is the bed that would require the
21 hundreds of wells to remediate; right?

22 A. That's correct.

23 Q. And the soil below 18 feet -- I'm sorry.
24 The soil between 18 feet below the
25 surface and the so-called A bed at this location,

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1 that's largely clay; right?

2 A. Yeah. But I wouldn't call it impervious
3 clay because if it was, then salts wouldn't have
4 wound up down there in the first place. They had
5 to leach from the surface at some point. So the
6 soils have exhibited leaching characteristics. So
7 the water should go through it.

8 Q. Is there a Louisiana rule, regulation,
9 or a statute that ICON is proposing to apply
10 instead of Rule 29-B in connection with its with
11 exceptions plan?

12 A. No, it's not.

13 Q. Okay. And you testified a little bit in
14 response to Mr. Keating's questions about the
15 reports and the litigation. You did not sign the
16 reports and the litigation; right?

17 A. The original two reports that were done
18 in the litigation --

19 Q. Right.

20 A. -- I did not sign.

21 Q. ICON in the rebuttal report in the
22 litigation had included a plan to remediate soil
23 and groundwater to 29-B and to MO-1 RECAP
24 standards. Do you recall that?

25 A. Yes.

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1 Q. Okay. What ICON submitted to LDNR does
2 not include RECAP remediation numbers; right?

3 A. That's correct; right.

4 Q. ICON's proposed most feasible plan
5 submitted to LDNR is not based on a RECAP
6 evaluation by ICON or anyone else; right?

7 A. It's not -- our plan is not based on a
8 RECAP at all.

9 Q. Right. You did not rely on
10 Dr. Schuhmann's opinions in defining the scope of
11 any of ICON's remediation plans right?

12 A. No. Not with what we're submitting
13 here.

14 Q. You have not presented a cost
15 calculation based on Dr. Schuhmann's analysis?

16 A. Our rebuttal report barium area overlays
17 the areas that he raised concerns about.

18 Q. Okay. And we'll get to that. We'll get
19 to the -- you're talking about the mallards, the
20 eight --

21 A. No. I'm talking about the rebuttal
22 report that you brought up that had 29-B and RECAP
23 MO-1. We all -- barium is included in the RECAP
24 MO-1 excavation.

25 Q. Right.

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1 A. And that area overlays the area that
2 Dr. Schuhmann voiced concerns about.

3 Q. And ICON chose not to submit that to the
4 LDNR as part of its most feasible plan; correct?

5 A. No. That's not part of my purview of
6 this.

7 Q. In fact, at the time that ICON submitted
8 its most feasible plan, you hadn't sat down and
9 read Dr. Schuhmann's report. You just skimmed it;
10 right?

11 A. Well, I think they were pretty much
12 submitted on the same day. I didn't have any time
13 to review his report. I think there were 60 days
14 after the submittal of the Chevron report for us
15 to respond to it.

16 Q. I want to ask you a couple of questions
17 about reverse osmosis. We've already established
18 that you all -- you haven't been involved in using
19 a reverse osmosis system for remediating
20 chlorides; right?

21 A. No, I have not.

22 Q. Have you investigated what effect
23 elevated sulfate concentrations will have on
24 reverse osmosis membranes?

25 A. Like I said, we sent them originally the

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1 list of constituents that were in the groundwater
2 and asked if their product would achieve our
3 remedial goals. They told us yes. There are
4 issues with iron and other elements. That's why
5 they have pretreatment before it ever gets into
6 their system. So they faced these issues before,
7 and this is going to be the same thing that we do
8 with all of our other remediation systems. You
9 purchase these systems from a particular vendor.
10 That vendor is not just going to sell you their
11 system and then just say I'm done with you.
12 They're actually going to provide customer support
13 to you. So if anything goes wrong with their
14 system, they're there to troubleshoot it. Anytime
15 we start up one of our groundwater systems with
16 the UST sites, I've got the manufacturer there
17 with me starting it up, fine-tuning everything,
18 any problems that we have with it. I've been
19 running these pump and treats for 20-something
20 years now, and there's still issues that you've
21 got to call the manufacturer to resolve. And this
22 would be the same instance as we do all the time
23 at the UST sites.

24 Q. The vendor in this case is what?

25 A. It's Pure Aqua.

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1 Q. It's Pure Aqua, and you talked to the --
2 you talked to Pure Aqua about the Henning site
3 specifically?

4 A. Not about the Henning site but about
5 similar characteristics that we find at the
6 Henning site.

7 Q. So you have not sent to Pure Aqua any of
8 the data about -- the sampling data that would
9 reflect what might be in the water for their
10 product from the Henning site specifically?

11 A. No. I've sent similar sites to them
12 that contain similar concentrations to them.

13 Q. Similar concentrations of what?

14 A. Of everything, of metals, chlorides,
15 TDS. That's when we found out about the --
16 distinguished between the brackish and the
17 seawater system and the 5,000 TDS and the other
18 stuff about the iron. There's been communication
19 with them but not about this site specific but
20 about their technology and what it's designed for.

21 Q. When have you talked to Pure Aqua about
22 elevated sulfates of the levels that we're talking
23 about at this site?

24 A. I --

25 Q. You haven't, have you?

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1 A. I can't tell you one way or the other if
2 it's been discussed with them.

3 Q. Right. How much electricity is the
4 reverse osmosis system going to use?

5 A. I don't know. It's in our cost estimate
6 in our table.

7 Q. You have that in your cost estimate?

8 A. Yes. It's in the cost estimate in the
9 tables.

10 Q. As you sit here today, you can't
11 identify the amount in dollars, you'd just refer
12 us to the tables?

13 A. Correct. It's going to be a lot.

14 Q. You were one of the people at ICON who
15 signed ICON'S comments to Chevron's most feasible
16 plan, which is Exhibit G; right?

17 A. That's correct. It was done around the
18 same time with the same trial prep going on, and I
19 assisted in compiling all the information. So I
20 signed the report.

21 Q. There's a paragraph 7 in those comments.
22 So this is G, page 6. There's a paragraph 7 that
23 is entitled "Remediation Within the Current
24 Effective Root Zone." Do you see that?

25 A. Yes.

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1 Q. Okay. You wrote that paragraph; right?

2 A. I helped write this paragraph, yes, and
3 I think Mr. Miller talked some of about this
4 paragraph yesterday too.

5 Q. Okay. You mentioned the possibility of
6 growing other crops besides rice on this land in
7 the future; right?

8 A. That's correct.

9 Q. Now, at the time in the most feasible
10 plan, you had never talked to the landowner of the
11 Henning property; right?

12 A. No, I had not.

13 Q. You have no knowledge or had no
14 knowledge about plans for future use of the
15 Henning property; right?

16 A. No, I do not.

17 Q. Okay. You never talked to any farmers
18 about use of the Henning property; right?

19 A. I haven't talked to anybody associated
20 with the Henning property about any use for the
21 property, current or future.

22 Q. Remember, when I took your deposition, I
23 asked you about what other crops are you talking
24 about, and you mentioned sugarcane specifically;
25 right?

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1 A. Correct. I know it's grown in this
2 area.

3 Q. And you mentioned sugarcane in response
4 to Mr. Keating's questions here today?

5 A. That's correct.

6 Q. Have you reviewed the USDA soil types
7 for this property?

8 A. I know over the time that we've done
9 work on the property, I have, but I can't tell you
10 from this instance what they are. I do know in
11 conversations after the most feasible plan that
12 the area that we're looking to remediate at one
13 time was growing sugarcane.

14 Q. Is this soil suitable for growing cane
15 in the locations we've been looking at?

16 A. It did at one time. I mean, I'm not a
17 farmer. I mean, I don't know, but I know at one
18 time that area did grow sugarcane.

19 Q. You're not a farmer. You're not an
20 agronomist; right?

21 A. No. I'm just telling you what I was
22 told about what was grown in the area on the
23 western side.

24 Q. Okay. You're not a soil scientist;
25 right?

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1 A. No.

2 Q. You heard Mr. Ritchie testify the soil
3 on his property is best suited to growing rice;
4 right?

5 A. I think I recall that. I didn't listen
6 to everybody's testimony prior to mine.

7 Q. Okay. You did not -- you don't have any
8 basis to dispute that the soil is best suited to
9 rice; correct?

10 A. I didn't do that evaluation.

11 Q. Okay. We could probably assume that
12 Louisiana's farmers know what they're doing when
13 they pick the crops to plant; right? They know
14 what will grow and will make a profit in the
15 particular area; right?

16 A. Yeah. But that changes from time to
17 time. I mean, at one time I think cotton was
18 grown in this area. Cotton isn't grown in this
19 area anymore. It's rice. There's sugarcane all
20 over this area. I mean, the crops will evolve
21 over time. It's not one specific crop that I know
22 that's been grown on any property for the life of
23 the property.

24 Q. Right. So you say sugarcane is grown
25 all over this area. Let's look at some

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1 information about that.

2 A. Okay.

3 Q. So what parish or parishes is this
4 property in?

5 A. It's in Jeff Davis and Calcasieu.

6 Q. Right. The parish line goes right
7 through the middle of the property; right?

8 A. That's correct.

9 Q. Have you ever looked at LSU Ag Center
10 data on agricultural land use at Calcasieu Parish
11 and Jefferson Davis Parish?

12 A. No, I have not.

13 Q. Let's look at that. We can put it on
14 the screen, but I got paper copies too. This was
15 Exhibit 158.3.

16 Are you familiar with the LSU Ag Center?

17 A. I've seen it before.

18 Q. They are a good source of information
19 about agriculture in Louisiana; right?

20 A. Yes.

21 Q. Okay. This document, Chevron
22 Exhibit 158.3, is the Louisiana summary for
23 agricultural and natural resources from 2019 from
24 the LSU Ag Center. Do you see that?

25 A. Yes.

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1 Q. And then if you go in here -- I mean, if
2 we look at, for example, page 107 of this
3 document -- now, it's a little confusing. You see
4 the -- there's a Bates number down here of 108,
5 but the page in the document itself is 107.

6 A. (Reviews document.)

7 Okay.

8 Q. Do you see Jefferson Davis Parish here?

9 A. Yes.

10 Q. And you see that if we go up to the top
11 area, the top section of this chart, that the rice
12 grown in this Jefferson Davis Parish is 78,144
13 planted acres. Do you see that?

14 A. Yes.

15 Q. Okay. The sugarcane is 714.8; right?

16 A. Yes.

17 Q. A hundred times the amount of acreage
18 planted in rice versus in sugarcane in this
19 parish; right?

20 A. Yes.

21 Q. Let's look at Calcasieu Parish. So
22 that's on page 62, which is probably Bates
23 numbered 63.

24 See, in Calcasieu Parish down at the
25 bottom of page 62, the amount of rice grown in

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1 Calcasieu Parish -- the acreage is 6,768 acres.

2 Do you see that?

3 A. Yes.

4 Q. And the sugarcane is 99.7 acres. Do you
5 see that?

6 A. That's correct.

7 Q. Okay. So once again, substantially more
8 rice in this parish is grown than sugarcane;
9 right?

10 A. Yes.

11 Q. What's the nearest sugar mill to the
12 Henning property?

13 A. I don't recall.

14 Q. If Henning needed -- if he grew
15 sugarcane on the property, he'd need to get it
16 milled; right?

17 A. Yes. I'm telling you, it once was grown
18 on the property.

19 Q. Right. You're not aware of sugarcane
20 growing around this property now; right?

21 A. No, not now. Currently, no.

22 Q. Yeah. You're not aware of sugarcane
23 growing in this area?

24 A. No. All I'm saying is that they could
25 potentially revert back to doing that if they

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1 wanted to.

2 Q. Right.

3 A. I mean, they shouldn't be forced to only
4 grow a crop with a rooting depth of 10 inches.

5 Q. The farmers in Jefferson Davis and
6 Calcasieu Parish have not been forced to
7 overwhelmingly choose to grow rice instead of
8 sugarcane; right?

9 A. No. They do it because they want to,
10 and they should have the choice to change if they
11 want to.

12 Q. Right. They probably do it because
13 that's the most profitable crop for the area;
14 right?

15 A. I don't know. I don't analyze their
16 profits.

17 Q. Have you ever looked at the website of
18 the American Sugar Cane League?

19 A. No, I have not.

20 Q. Well, let's look at that. Did you know
21 that the American Sugar Cane League has got a map
22 on its website that shows that there are 11 raw
23 sugar factories operated in Louisiana? Do you see
24 that?

25 A. Yeah.

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1 Q. And it's showing none of them west of
2 Lafayette; right?

3 A. Yeah. And some of the farmers on
4 previous sites that we've worked on had to ship
5 them out of state to get their product refined
6 because the mills in Louisiana were booked and
7 they have a finite window of when they have to
8 produce it.

9 Q. Right. Yeah.

10 A. I mean -- so it's not uncommon for them
11 to have to ship the sugarcane to get it milled.

12 Q. Okay. Just to kind of wrap this up, you
13 don't have any expertise whatsoever in root zones
14 or rooting depths; right, sir?

15 A. No. Other than what I read in
16 publications.

17 Q. Right. We could all read the same
18 publications and would have the same amount of
19 expertise on that; right?

20 A. Yes.

21 Q. You're not claiming any expertise beyond
22 what anybody else in this room could do?

23 A. That's correct.

24 Q. Right. And interpret the documents?

25 A. I did not claim otherwise.

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1 Q. You wrote a paragraph in ICON's report
2 about additional evaluation of barium; right?

3 A. Yes.

4 Q. Okay. Now, you testified that there
5 was -- well, let's take a look at that paragraph
6 actually. It's in E .0017. This is ICON's most
7 feasible plan?

8 A. Yes.

9 Q. You wrote this paragraph; right?

10 A. Yes, I did.

11 Q. You offered an opinion about remediating
12 barium in soil to be protective of mallards;
13 right?

14 A. No. That's not what this paragraph was
15 meant for. It's -- it -- as I explained earlier,
16 29-B does not offer a standard for barium. So
17 instead of just completely ignoring it, I used
18 this resource after discussion with Dr. Jim
19 Rodgers, and I stated that I knew ducks were in
20 the area. So I just used this as an example and
21 said if this was the case, this is about the
22 estimate that it would cost to clean this area up.

23 Q. You reference a TCEQ, Texas Commission
24 on Environmental Quality, ecological protective
25 concentration level database; right?

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1 A. Yes. And I attached in an Appendix J in
2 my report.

3 Q. Right. Remember, I showed you your
4 report -- your printout from Appendix J, and you
5 didn't know what most of that mumbo jumbo was;
6 right? The numbers, the letters, what all that
7 stuff meant; right?

8 A. Correct. Because I didn't compile the
9 database. Dr. Jim Rodgers worked on that. So he
10 would be more familiar about what each number was
11 for. He just told me that the PCL was the -- at
12 that limit, you should start seeing adverse
13 reactions to whatever animal, mammal, amphibian
14 that you were comparing it to.

15 Q. A week before this most feasible plan
16 was due to be filed you called Jim Rodgers --
17 Dr. Jim Rodgers, who's a scientist in Texas who
18 ICON works with on a lot of different matters;
19 right?

20 A. That's correct.

21 Q. And you asked him about ducks, and he
22 said go use this database; right?

23 A. No. I didn't ask him specifically about
24 ducks. I asked him if he had a database available
25 that -- it was more like a look-up chart that you

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1 could see on certain animals.

2 Q. In any event Dr. Rodgers took your call,
3 and he was happy to talk to you about how to
4 determine an ecological protection level; right?

5 A. Right. Based on this table.

6 Q. But ICON did not provide any expert
7 opinion from Dr. Rodgers at all in its most
8 feasible plan; right?

9 A. No. I just used this as -- like I said,
10 as an example.

11 Q. You say that: "Based on the TCEQ PCL
12 table, if barium concentrations remediated to be
13 protective of mallards (832 milligrams per
14 kilogram)."

15 Do you see that?

16 A. Yep.

17 Q. The number you came up with is
18 832 milligrams per kilogram; right?

19 A. Right. That's in the chart.

20 Q. Right. That's in the chart that you
21 pulled off of an online database where most of the
22 information to you was mumbo jumbo; correct?

23 A. Correct. Because I didn't assist in
24 compiling all the data.

25 Q. Right. You say that if the barium

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1 concentration were remediated to be protective of
2 mallards, 832 milligrams per kilogram, the cost
3 for the additional soil remediation would be
4 approximately \$5 million. Do you see that?

5 A. Yes.

6 Q. This would increase the soil remediation
7 cost in ICON's plan severalfold; correct?

8 A. Correct. If you were asking for that
9 number and remediating barium to that level.

10 Q. In the figures to ICON's most feasible
11 plan, there is a -- and we already looked at,
12 several times, maps showing the proposed soil
13 excavation locations without exceptions to 29-B
14 and with exceptions to 29-B. The little pink
15 spots; right?

16 A. Right. And none of it includes barium.

17 Q. Right.

18 A. Because we're not asking for barium to
19 be remediated.

20 Q. Right. And you have not drawn any map
21 for barium, right, that's in the most feasible
22 plan; right?

23 A. No. It was in the previous report.

24 Q. And there's no calculations whatsoever
25 that go into that number \$5 million; right?

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1 A. Yes, there is. It was based off the map
2 that was previously provided in the rebuttal
3 report as I explained earlier, and we're not
4 asking for this amount or even to clean barium,
5 just that it needs to be further evaluated, and
6 it's my understanding that after that was conveyed
7 to the people that we're working for, Carmouche
8 and Mudd, that they then went and got Dr. Rick
9 Schuhmann.

10 Q. Well, Mr. Schuhmann testified about
11 human health; right?

12 A. Right. So they could evaluate barium.

13 Q. This is ecological health; right?

14 A. Correct. It's two different things.

15 Q. And there's no calculation underlying
16 that \$5 million that you have there.

17 A. Approximately \$5 million that's been provided to
18 the panel; right?

19 A. No. Because we're not asking for that
20 money.

21 Q. Right. Instead, you're suggesting that
22 there could be some sort of ecological evaluation
23 that takes place for this site? Is that your
24 testimony?

25 A. Right. That that barium be evaluated.

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

1 Q. Right. Why didn't ICON have Dr. Rodgers
2 do that?

3 A. Because we don't hire experts.

4 Q. Do you know why Mr. Henning didn't have
5 Dr. Rodgers do that?

6 MR. KEATING: Your Honor, I'm going to
7 object. He's asking about why counsel did or
8 didn't hire someone, and it's not --

9 JUDGE PERRAULT: Sustained.

10 BY MR. CARTER:

11 Q. You're not an ecologist; right, sir?

12 A. No.

13 Q. It didn't stop you from putting this --
14 writing this paragraph in this report, but you're
15 not an ecologist; correct?

16 A. I didn't say I did an ecological
17 evaluation on the property. I said I went to a
18 chart that was generated by ecologists, got a
19 look-up value based on that particular animal, and
20 stated that if it was required to be remediated,
21 this is about the money that you're going to have
22 to spend to do it. Nowhere in that paragraph does
23 it say that ICON sets itself as being an
24 ecological risk assessment or that we're saying
25 that it has to be done.

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

1 Q. This was your first time using the TCEQ
2 ecological PCL database; right?

3 A. Right. I didn't even know it existed
4 before now.

5 Q. Right. It's the only time in your
6 career you've ever looked at that website;
7 correct?

8 A. Yes.

9 Q. You don't know whether the ecological
10 PCL calculation from the TCEQ involves any input
11 factor for the percentage of the mallards' habitat
12 that's elevated in barium; right?

13 A. No.

14 Q. You don't know whether the calculation
15 includes an input for the percentage of time that
16 the mallard stays on the Henning property; right?

17 A. No.

18 Q. You do know mallards are migratory;
19 right?

20 A. Yes.

21 Q. You don't know whether the calculation
22 includes any input for the percentage of the
23 property that has elevated barium; right?

24 A. No.

25 Q. Okay. You have never remediated a site

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

1 in Louisiana based on a look-up table from Texas;
2 correct?

3 A. Not to my knowledge, no.

4 Q. Okay.

5 MR. CARTER: Thank you for your time today,
6 sir.

7 JUDGE PERRAULT: You offered --

8 MR. CARTER: Yes. 158.3, Your Honor.

9 JUDGE PERRAULT: 158.3. And what's the title
10 of that exhibit?

11 MR. CARTER: The title of it is "LSU Ag
12 Center, Louisiana Summary: Agriculture and
13 Natural Resources, 2019."

14 JUDGE PERRAULT: Any objection to
15 Exhibit 158.3?

16 MR. KEATING: No, Your Honor.

17 JUDGE PERRAULT: No object. So ordered. It
18 shall be admitted.

19 PANELIST OLIVIER: Your Honor, I do have a
20 couple of questions for the witness. But
21 before, can we take a ten-minute bathroom
22 break?

23 JUDGE PERRAULT: All right. Anybody object
24 to a two-minute bathroom break?

25 MR. KEATING: No objection, Your Honor. I do

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1 have a brief redirect, but it can be after
2 the bathroom break.

3 JUDGE PERRAULT: All right. We'll take a
4 ten-minute break. We'll come back at 3:50.

5 (Recess taken at 3:40 p.m. Back on record
6 at 3:53 p.m.)

7 JUDGE PERRAULT: We're back the record.
8 Today's date is February 10th, 2023. It's
9 now 3:53, and we're back on the record.

10 And are we ready for redirect?

11 MR. KEATING: Yes, Your Honor. Did the panel
12 ask questions --

13 JUDGE PERRAULT: They're going to wait until
14 you're finished.

15 MR. KEATING: Okay. Very good.

16 Before I forget, Your Honor, I'd like to
17 introduce Mr. Sills' slide show as Henning's
18 Exhibit XXXX. That's four Xs.

19 JUDGE PERRAULT: That's the slide show?

20 MR. KEATING: Yes, sir.

21 JUDGE PERRAULT: And how many pictures are in
22 it?

23 MR. KEATING: That's just what letter we
24 landed on.

25 MR. CARTER: No objection to Exhibit four Xs,

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1 Your Honor.

2 JUDGE PERRAULT: How many pictures are in it?
3 Twenty-seven? All right. There being no
4 objection, it shall be admitted.

5 REDIRECT EXAMINATION

6 BY MR. KEATING:

7 Q. Mr. Sills, I'm going to be very brief.
8 Mr. Carter talked about where this property is and
9 talked about you driving from Baton Rouge and
10 getting off the interstate and all this other
11 stuff.

12 You understand, Mr. Sills, this property
13 is located along a major state highway in the
14 southwest? Louisiana Highway 14?

15 A. Yes.

16 Q. And, in fact, Highway 14 goes right
17 through the property, does it not?

18 A. That's correct.

19 Q. And the town of Hayes, albeit a small
20 town, is located very close to this property;
21 right?

22 A. That's correct.

23 Q. And then just to the west, we've got
24 Lacassine and Bell City. Growing communities;
25 right?

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1 A. That's correct.

2 Q. Now, Mr. Carter asked you questions
3 about all these recovery wells and where you're
4 going to put them and what's going to happen here
5 and the saltwater disposal well. You didn't pick
6 where you're going to put them yet. That's
7 routinely determined in the field, is it not?

8 A. Correct.

9 Q. And you could give approximate locations
10 to the panel or Mr. Carter or whoever wanted to
11 know, but quite frankly, if it's going to be moved
12 10 feet this way or 20 feet that way, that doesn't
13 change the cost, does it?

14 A. Not really, no.

15 Q. That doesn't change what it's going to
16 do, does it?

17 A. No.

18 Q. Mr. Carter asked you about whether you
19 did a reservoir assessment for the saltwater
20 disposal well. Do you remember that?

21 A. Yes.

22 Q. You understand, Mr. Sills, that what ERM
23 is proposing is direct injection; right?

24 A. Correct.

25 Q. And frankly, if the reservoir for

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

1 some -- whatever reason is not suitable for
2 injection, you have an option for hauling
3 off-site; right?

4 A. Yes.

5 Q. And that would work just fine too;
6 right?

7 A. Yes.

8 Q. That's why you have that as a
9 contingency in your plan?

10 A. Correct.

11 Q. Mr. Carter pulled up the groundwater
12 plume map and showed you.

13 MR. KEATING: And I was impressed, by the
14 way, Jonah, with how you were able to draw
15 around that I. I couldn't do that.

16 BY MR. KEATING:

17 Q. But Area I, hey, it's not in the
18 admission area and all that other stuff. Do you
19 remember that?

20 A. Yes.

21 Q. The plume is the plume, though; right?

22 A. That's correct.

23 Q. And Mr. Miller designed the plume, but
24 Groundwater 101, if a continuous plume is
25 contaminated, you've got to deal with it; right?

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1 A. Correct.

2 Q. I really can't believe we're still
3 talking about this, but the hole at H-16 that you
4 propose to leave to help with the groundwater
5 recovery, i.e., let the rain fill it and recharge
6 the aquifer to aid in the groundwater recovery --
7 do you remember that?

8 A. Yes.

9 Q. If it's such a big deal that that's just
10 using a resource you have out there to help with
11 the project, we could just fill that hole and not
12 use it; right?

13 A. I mean, technically, yes. It would only
14 do nothing but help you, with leaving it open.

15 Q. Okay. And to model flushing for that
16 thing, you'd have to be able to predict the
17 weather; right?

18 A. Well, I mean, you'd have to understand a
19 lot of things as far as rainfall, how much water
20 you're putting into it, the permeability of the
21 clays. It's not anything that we tested, but as I
22 stated before -- I mean, there's salt to depth.
23 So it's conducive to leach through. So it -- we
24 know it's going to happen. We just don't know
25 what rate.

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1 Q. Right. It would just help, but it's not
2 necessary?

3 A. Correct. It's not required. It would
4 only help lower the concentrations of salt in the
5 soils and assist in the groundwater recovery.

6 Q. It's really a nonissue; right?

7 A. Correct.

8 Q. Mr. Carter showed you one of very, very,
9 very, very many -- as I'm sure these folks know
10 better than us -- LSU Ag publications; right?

11 A. Yes.

12 Q. And he relied on that to show you some
13 things about the prevalence of various crops in
14 Jeff Davis Parish and so on and so forth. Do you
15 remember that?

16 A. That's correct.

17 Q. LSU Ag Center publications are the exact
18 things that you rely on as an example for your
19 knowledge of rooting depths; right?

20 A. That's correct.

21 Q. He talked to you about the mallard and,
22 you know, whether it was or was not an appropriate
23 concentration for mallards and whether you did an
24 ecology study and all these things. That was
25 provided just as an example; right?

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1 A. Exactly.

2 Q. You're not professing to be an expert in
3 ecology?

4 A. No, I'm not.

5 Q. You're not asking this panel today to
6 remediate barium, are you?

7 A. No, I'm not.

8 Q. However, all ICON is saying -- all we're
9 saying -- correct me if I'm wrong -- is that we
10 think, based on what you've heard from Doc Rodgers
11 and whatever everybody heard Dr. Schuhmann talk
12 about today, additional assessment is warranted
13 for the barium. That's all we're saying today;
14 right?

15 A. That's correct.

16 Q. Lastly, Mr. Sills, Mr. Carter did some
17 pretty impressive math on the fly, I might say,
18 talking about how long it's going to take you to
19 put in these recovery wells and then to do this
20 and then your Phase 1 where you're testing the
21 wells, and you're doing all these other things
22 and, oh, gosh, look how long it's going to take
23 you to clean this contamination. The fact of the
24 matter, Mr. Sills, Chevron left their
25 contamination here for about 80 years; right?

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1 A. Yes.

2 Q. And now they're going to criticize how
3 long it's going to take you to get it out, but
4 you're confident your techniques are sound, right?

5 A. Yes. And it's all an aspect of size.

6 Q. Right. You're confident your math is
7 right?

8 A. Yes.

9 Q. It's all an aspect of size. It is what
10 it is?

11 A. Correct. I mean, that, to me, is
12 just -- as an operator it's don't contaminate a
13 little to where you can clean it up, contaminate
14 large amounts to where it takes a long time and
15 then it becomes unreasonable.

16 Q. It's a product of what's out there?

17 A. Right.

18 Q. And in order to remediate it in
19 compliance with the regulations, you're proposing
20 to do exactly what you talked about?

21 A. That's correct.

22 MR. KEATING: No further questions.

23 JUDGE PERRAULT: Does the panel have any
24 questions?

25 PANELIST OLIVIER: Yes. This is Stephen

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1 Olivier.

2 You did just clarify one or two things
3 that I had. Well, the first one was
4 basically if for some reason the geology
5 wasn't favorable to have an injection well
6 and inject over the course of 10, 12 years or
7 however it needs to be, what would you do
8 with the water? And like you just described,
9 you would just haul it off. So they do have
10 the option. You would haul it off off-site.

11 But that leads to the next question. In
12 that scenario have y'all contemplated what
13 you would classify that fluid as to be hauled
14 off, and have you looked to see where you
15 would haul it off for disposal?

16 THE WITNESS: Right. We got a quote from
17 R360 based on that, and we're assuming that
18 the solids are going to be to a level that
19 they won't have to blend it. So we're
20 assuming that it's going to be a super
21 concentrate solution, and we get one price.
22 Now, the problem is, you know, if it's not
23 and it's a little bit more fresh, then they
24 have to blend in the prices a little bit
25 more. But we went conservative, thinking

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1 that they -- that the system would do what
2 it's designed to do, and we'd have a solution
3 capable of being injected without blending.

4 PANELIST OLIVIER: Okay. And so solids and
5 fluids, everything, you would send most
6 likely, if able, to R360 is what -- just
7 solids and liquids?

8 THE WITNESS: Right. And when I say
9 "solids," I mean TDS.

10 PANELIST OLIVIER: Okay.

11 THE WITNESS: So that's what I'm talking
12 about as far as solids. It's not like a
13 sludge or anything like that, and I'm just
14 talking about the total dissolved solids in
15 the fluid itself.

16 PANELIST OLIVIER: And if you weren't able to
17 for whatever reason -- if DEQ didn't approve
18 discharge of the treated water after you
19 treated it, have y'all contemplated what you
20 would do with that material if you had to
21 haul it off or what would you classify that
22 material as?

23 THE WITNESS: It would be more fresh. So if
24 we had to inject that fluid, it would cost
25 more to do so.

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1 PANELIST OLIVIER: And so if you had to haul
2 it off, have y'all contemplated where you
3 would haul it to or what you would classify
4 it as?

5 THE WITNESS: It would probably go to the
6 same facility, just as convenience, and like
7 I said, we didn't spec that out because we
8 assumed, just like all of our other projects,
9 that we would be granted an LPDS based on
10 certain testing requirements to discharge the
11 clean water. Because like I said, it's used
12 also to make drinking water. So we assume
13 that it would be able to be discharged, but
14 if it's not, then it could go to R360. It
15 would just cost more to do so.

16 PANELIST OLIVIER: It's all the questions I
17 have.

18 JUDGE PERRAULT: Anyone else?

19 All right. Thank you very much.

20 Call your next witness.

21 MR. KEATING: Your Honor, I apologize. Could
22 I have one minute to go to my truck and get
23 my notepad that I have my questions on?

24 JUDGE PERRAULT: Yes.

25 MR. KEATING: I'd like to bring it in here.

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1 JUDGE PERRAULT: We're off the record.

2 (Recess taken at 4:04 p.m. Back on record
3 at 4:06 p.m.)

4 JUDGE PERRAULT: We're back on the record.

5 It's now 4:06 on February 10th, 2023.

6 We have a new witness. Please state
7 your name for the record, sir.

8 THE WITNESS: Thomas Guy Henning.

9 JUDGE PERRAULT: And please spell your last
10 name.

11 THE WITNESS: H-E-N-N-I-N-G.

12 THOMAS HENNING,
13 having been first duly sworn, was examined and
14 testified as follows:

15 JUDGE PERRAULT: Counsel, please proceed.

16 DIRECT EXAMINATION

17 BY MR. KEATING:

18 Q. Mr. Henning, good afternoon.

19 A. Hello.

20 Q. You're famous now.

21 A. Apparently. Not the way I want it.

22 Q. Can you explain to the panel how you're
23 affiliated with Henning Management, LLC?

24 A. I am the manager and sole owner.

25 Q. Okay. And have there ever been any

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1 other members or managers of Henning?

2 A. Never.

3 Q. And I'm just going to call it Henning
4 Management if that's okay.

5 A. Okay.

6 Q. When was Henning Management formed?

7 A. 2009.

8 Q. Why did you form Henning Management?

9 A. Because I was beginning -- I was buying
10 a farm. So -- and it was like a holding company.
11 So I bought a -- I formed it, and then I bought a
12 farm.

13 Q. Has the company been used as a land
14 holding company since that time?

15 A. Yes. I bought several more farms since
16 then.

17 Q. Does Henning Management own other
18 properties besides the one at issue in this case?

19 A. Yes.

20 Q. And how much property approximately does
21 Henning Management own?

22 A. In Louisiana?

23 Q. Just overall.

24 A. About 18,000 acres now.

25 Q. Where are these 18,000 acres located?

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1 A. Most of them is Southwest Louisiana. I
2 don't know if south of Kaplan is called Southwest
3 Louisiana. I'm not sure, but I have a piece over
4 there.

5 Q. Probably depends on who you ask.

6 A. Yeah.

7 Q. How many acres is the subject property?

8 A. I think about 1200.

9 Q. Okay. When did you purchase this
10 property?

11 A. 2018.

12 Q. How did you come to find out this
13 property was available to purchase?

14 A. A guy I know, Mark. I can't remember
15 Mark's name, but he's the manager of a group
16 called Walker Properties. And Walker Properties
17 owns a bunch of land in the area, and they bought
18 their land, I think, in the '20s or something like
19 that. And he knew I had farms in the area. So he
20 called me and asked me was I interested in buying
21 that farm. And I said sure. I'm -- you know, I'm
22 always looking for land. So we started talking
23 about it.

24 Q. People often call you to see if you want
25 to buy land?

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1 A. Yeah. I get -- I've kind of been known
2 now to buy a bunch of farms and -- but I've
3 changed my theory. I've kind of bought some away,
4 but, I mean, yeah, they do.

5 Q. Why did you buy this particular piece?

6 A. It's pretty much adjacent to another
7 farm I have, and, also, my son, who is in the
8 guide business -- and I'm trying to keep him
9 going, you know, as a future. He's about 27, and
10 we have the property. And he -- I made him,
11 before he went into the guide business, go work
12 for different -- for a guide service, somebody
13 else so he --

14 Q. You're talking about a hunting guide?

15 A. Yeah, a hunting guide.

16 -- so he'd learn how to do it. That
17 particular guide had the lease on this property.
18 So he had hunted it for two seasons, and he told
19 me it was a good hunting area too. So I said
20 okay. We'll go look at it. We'll go get it and
21 see -- try to get it.

22 Q. Okay. Did you have a Phase 1 done
23 before you bought this property?

24 A. Yes, I did.

25 Q. Tell the panel why you had a Phase 1

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1 done before you bought this property.

2 A. I guess, you know, I was buying land and
3 the banks and stuff like that would start
4 talking -- or people told me the banks were asking
5 for Phase 1s to buy property. Didn't really know
6 what the Phase 1 was doing, but it was a big piece
7 of property. So I said, well, I'll get a Phase 1
8 and see what it says.

9 Q. Did you read the Phase 1 in detail
10 before you bought the property?

11 A. No. I pretty much went to the summary,
12 telling me that it -- you know, it had oil and gas
13 operations on it and maybe you'd need to look into
14 it and then that's it.

15 Q. Did you see anything in the Phase 1 that
16 alarmed you or made you think you might not want
17 to buy this property?

18 A. I didn't see anything. I didn't really
19 realize what, you know, all was in it, but I
20 didn't see anything that just said don't buy the
21 property.

22 Q. But the Phase 1 that you got done for
23 the property told you that there had been prior
24 oil and gas activity on the property, including
25 the use of pits; right?

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1 A. Yes.

2 Q. In your experience buying however
3 many -- how many tracts of land have you bought in
4 Louisiana?

5 A. I don't know.

6 Q. Approximately?

7 A. Eight, nine, ten.

8 Q. And you grew up in Southwest Louisiana?

9 A. (Nods head.)

10 Q. Lived there your whole life?

11 A. Yes.

12 Q. How prevalent is it to find a farm of
13 this size in Southwest Louisiana that hasn't had
14 some oil and gas operations on it?

15 A. Not very many. I mean, now most
16 everybody has something on their property, they've
17 have had some kind of oil and gas on their
18 property. It's either by drilling, pipeline,
19 something. You see it all the time. I grew up
20 nearby Hackberry. I saw all that.

21 Q. Did the Phase 1 also say that there
22 might be environmental issues on the property from
23 the oil and gas activity?

24 A. It might be, yes.

25 Q. But that the only way that could be

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1 determined was from sampling?

2 A. Yes.

3 Q. Have you seen that type of language in
4 other Phase 1 reports you've had done?

5 A. It was similar to the one I had about
6 two years before I bought this property.

7 Q. What changed, Mr. Henning? What gave
8 you concern?

9 A. Oh, to look at this property closer?

10 Q. Yes.

11 A. Well, after I bought it -- and I think
12 we talked about Hayes -- the previous witness
13 talked about Hayes, which -- it's a store 2 miles
14 from my property, and it has a grocery store. And
15 everybody kind of goes there and meets, and, I
16 mean, you run -- once you get into the smaller
17 communities, you run into people, and they know
18 who you are. I don't know who they are, but they
19 know who I am. And they would start talking and
20 saying, hey, you bought the property down the
21 road. You bought the property that had the oil
22 well sink on it.

23 And I was like: Oil well sink on it?
24 And then I've been asked that a couple times.

25 I was like: What are y'all -- you know,

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1 what are you talking about?

2 And they said, well, there was an oil
3 well. It basically got swallowed up and went
4 down, the whole thing. They said the whole thing
5 went down with it.

6 And I was like: Okay. That doesn't
7 sound too good, and I'm thinking maybe it's a salt
8 dome or, you know, it just swallowed up -- because
9 I've seen things like that.

10 So then I started kind of getting
11 worried about the whole oil rig and everything
12 going down and just asked more people in the area.
13 Because, I mean, I know the -- oh, yeah, that
14 happened back in, you know, whatever, back in the
15 day. And finally one time I ran into David at
16 a -- I don't know if it's a party or something for
17 the school or kids. And I asked him, I said, hey,
18 they're telling me this land I bought had an oil
19 well on it and it sunk and I'm wondering if I
20 should be worried about it.

21 Q. Who is David?

22 A. David Brucchaus. David Brucchaus. He's
23 one of your partners. He's been a friend for
24 years and year and just -- you know, I see him
25 frequently, you know, socially.

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1 So I said should I be -- he said, well,
2 let me look into it. And I think he called me and
3 said, yeah, I think we need to talk. So I called
4 him back later.

5 Q. Well, don't tell us what you talked
6 about with David.

7 You also have a relationship with my
8 other partner, Mr. Mudd?

9 A. He is the great-uncle of my grandson and
10 my future-to-be-born grandson on Monday.

11 Q. Congratulations on that, by the way.

12 When you looked at the Phase 1 and then
13 when Mr. Grossman went through it with you in
14 painful detail in your deposition, do you remember
15 seeing anything about a sunken well?

16 A. I don't think so, no.

17 Q. You mentioned this earlier, but have you
18 had Phase 1 reports done on other property that
19 you have bought?

20 A. Yeah. I had one done on a piece I
21 bought about two years prior to this.

22 Q. And where is that property located?

23 A. South of Sulfur, between Sulfur and
24 Hackberry.

25 Q. Is that the one you commonly call the

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1 Choupique?

2 A. Choupique -- it's called the -- we call
3 it the Choupique property.

4 Q. So you had a Phase 1 done for the
5 Choupique property. Who did that Phase 1?

6 A. Same outfit that did the one on this
7 one.

8 Q. Was that Arabie?

9 A. Yes.

10 Q. Now called Southland?

11 A. Yeah, I think so.

12 Q. Now, did the Phase 1 that Arabie did for
13 you for the Choupique property indicate whether or
14 not oil and gas activity had occurred out there?

15 A. They said there was a well drilled on it
16 and that there was several wells drilled around it
17 or next to it or something -- adjoining property,
18 I think, is how they used it.

19 Q. And did the Arabie report you got for
20 Choupique give you that same standard cautionary
21 language about further investigation and all this
22 other stuff?

23 A. Yeah. It was a different word, but it
24 was the same one, the same "you need to look into
25 it" or something.

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1 Q. Have you ever had any reason to further
2 look into or have concerns about an issue on the
3 Choupique property?

4 A. No, I have not. I haven't done anything
5 about it. I just -- I'm out there now.

6 Q. You haven't heard about a sunken well,
7 for example, on the Choupique property?

8 A. No.

9 Q. Have you ever filed a lawsuit for the
10 Choupique property?

11 A. No.

12 Q. Do you have any intention of doing so?

13 A. Not that I know. Not -- I don't have
14 any information that would require me to do it.

15 Q. Let's go back to the property at issue.
16 Are you looking to buy any other property in the
17 Hayes area?

18 A. Well, I think I mentioned that there's
19 some -- two other landowners that are owned by
20 third generations that, you know, might come up
21 and, you know, try and consolidate the property
22 because the properties that I have are all -- and
23 I think -- I'm sure they've seen have maps of it,
24 kind of squiggly, so you try to fill in those
25 gaps. So that would be advantageous to me.

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1 Q. Do you know if there have been
2 historical oil and gas activities, like, on any of
3 those other properties?

4 A. I have no idea.

5 Q. Does that have any bearing on whether or
6 not you buy a property?

7 A. That's not what I'm interested for.

8 Q. What did you initially plan to use this
9 property for when you bought it?

10 A. When I bought it? Pretty much probably
11 rice farming and hunting.

12 Q. Okay. What's one of the first things
13 you did after you bought this property?

14 A. Well, I had to get it back into rice
15 farming. I probably -- the -- it's on the
16 Lacassine Bayou, and for the last couple of years,
17 the farmer who had it under the previous owner was
18 basically just collecting insurance money. He
19 wasn't growing the rice because the Lacassine --
20 we -- that was a couple of years probably before
21 this. We were getting a lot of rain. So high
22 water was coming over the little bitty levee that
23 they had. So I went and built a protection levee
24 so we could start growing rice in there.

25 Q. Okay. Roughly how much did you spend to

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

1 get that east side away from this area we're
2 talking about back in good rice production?

3 A. I think it came out at \$650,000.

4 Q. And did that improve the rice farming?

5 A. Oh, yeah. Now -- I mean, we didn't --
6 we don't -- well, we hadn't had a big flood, but,
7 yeah, we're farming that side, all the acreage
8 over there that we can.

9 Q. Do you own any other property that you
10 use for farming and hunting?

11 A. Yes. Most everything I have is either
12 for farming or hunting.

13 Q. Do you ever plan to use this property
14 for anything besides hunting and farming?

15 A. Well, I'm looking at something to do on
16 the west side. Everybody is talking about the
17 west side, and we mentioned -- or I got with my
18 son about a pond, digging a pond over there for
19 part of a lodge of the business that he's in.
20 Because we get these clients that come in, and
21 they spend two or three days. Well, the hunting
22 is only in the morning. They got all afternoon.
23 So another competitor has similar ponds like this
24 and they all like that. And they go fishing at
25 the pond, and so that was something -- because --

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1 and they've dug ponds similar to what we're
2 thinking about. Might put -- but it was pretty
3 costly to do that, but I hadn't put that away yet.

4 And it wasn't sugarcane. So I don't
5 know we'd do that again. I might try to put it in
6 rice, but if I do, it had to -- the way -- when
7 they came in, the land sloped a different way.
8 They took it out of rice and put it in sugarcane
9 and sloped the land a different way. If we went
10 to go put it in rice, the farmers have to tell me
11 that I'd have to re-slope the land and go the
12 other way. So they got that.

13 Q. I'm sorry. Go ahead.

14 A. No. I mean, right now we've got -- I've
15 got cattle on it on the north piece. I got a cell
16 site. DU is coming in to try to -- they're going
17 to tie -- we've just -- I think we signed the
18 contract or at least I've gotten a contract --

19 Q. That's Ducks Unlimited?

20 A. Ducks Unlimited on redoing about -- I
21 think it's like 75 acres north of the property.
22 We're going to have to clear that out. They're
23 going to build levees and put -- they're going
24 to -- and it's something with the NRCS, National
25 Resource Conservation Service, the federal side,

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1 and they're looking at trying to -- they're
2 working on a project to where they want to see
3 about filtering water. I'm not sure about exactly
4 how the project is, but when we put the water in
5 these ponds -- and they're going to try to filter
6 it and then let it out. I guess it's something
7 about farming, I think, to try to keep, you know,
8 the things getting out that -- they're supposed to
9 be bad or something. I don't know. But
10 they're -- you know, they're going to put that
11 project together, but we're going to have to clear
12 land, dig canals, and stuff like that.

13 Q. So you're making efforts to put the
14 property to use?

15 A. Yeah. I mean, that's what I want to do.

16 Q. You heard Mr. Carter earlier asking
17 questions of Jason Sills, who was up before you,
18 and there were some questions about whether there
19 are or are not sugarcane farms in the area around
20 this property. Do you remember that?

21 A. Yes.

22 Q. Are you aware of sugarcane farms very
23 close to here?

24 A. Very much so. I mean, sugarcane farmers
25 came in, in the last -- within the last 10 to 15

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1 years. Ran the price up along the land. It's --
2 I'm trying to buy land. They're these guys --
3 Colombia guys came in and bought acres and acres,
4 sections of land.

5 Q. You know Mauricio Santacoloma --

6 A. Santacoloma is the ones that did it.

7 Q. They've got thousands of acres in
8 production?

9 A. Yeah. So I'm not sure what that --
10 where those numbers are coming from. But yeah.

11 Q. So the notion that the sugarcane farming
12 in this area is rare or not existent is not your
13 appreciation?

14 A. No. And then as duck hunters -- the
15 people we -- you know, we don't like sugarcane
16 because we like rice farmers for shooting them
17 but -- and, you know, you've got to do what you've
18 got to do for -- to make a living. I don't blame
19 the guys that own the land because, I mean, I've
20 got land -- you know, you're talking about uses of
21 land. Our family has a farm north of Welsh. The
22 middle of the farm, rice farming. We've been
23 approached about doing a solar farm there. It's
24 going to pay ten times as much as a rice farmer
25 can do, I mean. So, you know, I talked to the

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1 farmers. I said, well, what am I supposed to do?
2 I said, you know, I don't want to run you out of
3 business but, I mean, ten times? So I don't blame
4 anybody if they go to sugarcane or whatever.

5 Q. So are you open to uses of your property
6 besides rice farming and duck hunting? Examples
7 like you just --

8 A. Yeah. Yeah. We -- you know, we rice
9 farm that piece up there. Well, the family does.
10 It's not mine. That's a family-owned farm and --
11 because our family, we go buy a lot of land. And
12 yeah. I mean, sooner or later, you've got to go
13 to with the economics because, I mean, it's just
14 not feasible or smart to do that -- not to do it.

15 Q. So you mentioned a possibility of doing
16 a fishing pond to complement the hunting, right?

17 A. Right.

18 Q. I think they call that a blast and cast?

19 A. Right. A blast and cast.

20 Q. Do you have other property besides this
21 where you have fishing ponds?

22 A. Yes. Yeah, I do.

23 Q. So it's not a far-fetched notion that
24 you might put one on this property?

25 A. No. In fact, it would be better because

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1 it's closer to where our lodge is unless then I
2 build a lodge over there, you know, and then
3 there, you know -- and then I've got my son, who's
4 coming up. We'll, you know -- I mean, you never
5 know what you're going to do with the property. I
6 mean, he may build a house over there because
7 there -- right across the street from this
8 property, I think there's a little cutout. You
9 don't have any maps here, but there's a cutout.
10 There used to be a homestead right there. People
11 do that all the time. They always do a little
12 cutout for a house in the middle of the farmland.

13 Q. Are you aware of any sugarcane farms in
14 the area being converted to a residential
15 subdivision?

16 A. Oh, yeah. And, you know, we -- there's
17 a piece between Iowa, which -- I don't know -- the
18 people in Lake Charles -- that's been sugarcane
19 farmed for years. If you ever told me that they
20 were going to build a residential section in the
21 middle of that sugarcane farm between Iowa and
22 Lake Charles where there's nothing out there,
23 probably 10 miles from Lake Charles, 7 miles from
24 Lake Charles, I would have told you you're crazy.
25 And I rode by just the other day, and they're

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1 building -- they got 20 homes out there in the
2 middle of the sugarcane farm.

3 Q. Are you aware if anybody has ever done
4 crawfish farming on this property?

5 A. Yes, they have.

6 Q. Previously, that's happened?

7 A. Oh, yeah. The former -- that was rice
8 farming. It was also crawfish farming.

9 Q. Is it fairly common for rice farmers to
10 alternate between rice and crawfish?

11 A. Oh, that's very common.

12 Q. Is that something, to your knowledge,
13 that Grant or Katie has considered -- I'm sorry --
14 your children?

15 A. Yeah. Now, we've talked about it, and
16 we've done a little bit on some other farms. But
17 we hadn't really got into it real heavy yet
18 because I'm just -- I mean, I'm too bogged down
19 with a new piece of property, trying to still get
20 this hunting operation going, and we talked about
21 moving from a "buy by the night" versus a club
22 membership, just trying to figure out things. So
23 we hadn't, you know -- but that's -- it used to be
24 done -- it used to be done on the property. We
25 could always go back and do it.

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1 Q. You mentioned you have a third
2 grandchild coming on Monday morning; right?

3 A. Uh-huh.

4 Q. And what is your appreciation of the
5 plans that your son has for the future of his
6 business?

7 A. Well, you know, he wants to grow it. He
8 wants to hunt it. You know, he's not into the
9 farming side so much, but we did take that
10 in-house, meaning the family will -- because --
11 meaning it's not a tenant farmer. It's a
12 tenant -- a farmer who works for me, and he does
13 it. So eventually the family -- my son or my
14 daughter is going to have to manage that part of
15 it and do whatever they want to do with it. I
16 mean, I want to be able to let them use it
17 whatever they want to do it.

18 Q. And is it your plan to raise -- help
19 raise your grandkids the same way? Grant and
20 Katie were out in the marsh and the fields?

21 A. I mean, that's just not only us but,
22 like I said, Chad Mudd, which is your law partner.
23 That's that side of the family. He's got the
24 other side. They're all into -- you know, they're
25 from Cameron Parish. They all enjoy the outdoors.

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1 We do the outdoors. Grant does the outdoors. My
2 daughter -- my son-in-law hunts with us, you know,
3 and they're going to be moving back in about two
4 years. So, you know, we enjoy the outdoors.

5 Q. Mr. Henning, do you think it's
6 reasonable for Chevron to impose restrictions on
7 how your kids or grandkids might use the property
8 in the future?

9 A. No. I think, you know -- I mean, no
10 matter where you buy your land, you ought to be
11 able to use it the way you want to use it and not
12 say, well, you can use it all these ways but this
13 way because we polluted your land.

14 Q. You understand that ICON prepared a plan
15 to clean up your property in this case?

16 A. I understand they did. I mean, I
17 don't -- I was sitting here listening to y'all do
18 this. I don't understand what's -- the parts
19 y'all are talking about, but, yeah, I understand
20 there's a plan for cleanup.

21 Q. Are you aware generally that it includes
22 soil excavation --

23 A. Soil and water. That's what I
24 understand.

25 Q. And although you don't know the

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1 details -- and I'll spare you those. We've talked
2 about that enough this week, I think.

3 Is it your desire for that plan to be
4 carried out?

5 A. Whatever plan that gets everything out
6 in the best usable way. I mean, completely
7 cleaned to where there's no restrictions of what I
8 can do with my land in the future.

9 Q. Do you understand, Mr. Henning, that
10 whatever this panel decides today -- let's just
11 say they implement ICON's feasible plan to the T.
12 No money -- not one dime goes into Henning's
13 pocket?

14 A. That's my understanding. I'm not here
15 asking for any money.

16 Q. You understand that that's not the
17 purpose of this?

18 A. The purpose of -- my understanding to be
19 here is to get Chevron, I guess, or whoever is
20 responsible for it who -- I think Chevron, I
21 guess, admitted to it -- to clean up the property.
22 That's all that we're here for is to get it clean.

23 Q. Mr. Henning, let me circle back to
24 something. I know Mr. Grossman is going to talk
25 to you about Phase 1 reports. So I'd just as soon

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1 talk about it real quick.

2 You remember he showed you some e-mails
3 where you had corresponded back and forth with
4 Jared King, I believe it was, from Southland?

5 A. Uh-huh.

6 Q. And there was something about setting a
7 meeting after you got the Phase 1?

8 A. Uh-huh.

9 Q. Did you ever meet with him?

10 A. Yes. The answer to those questions were
11 yes.

12 No, I never did meet.

13 Q. And you remember Mr. Grossman showed you
14 dozen of pictures that Southland took at the
15 property; right.

16 A. Correct.

17 Q. When was the first time you saw those
18 pictures?

19 A. At my deposition.

20 Q. Did Southland send you those pictures?

21 A. No, they did not.

22 Q. In fact, do you remember, in the
23 Phase 1 -- both Phase 1s for Choupique and for
24 this property, it said, hey, we've got pictures.
25 We've got aerials. I don't remember what else it

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1 was. If you want any of that stuff, let us know?

2 A. Right.

3 Q. Did you ask them for anything?

4 A. Yeah. I asked them for the aerial
5 photographs.

6 Q. What did you want those for?

7 A. Well, for the farm. Frame them, put
8 them up -- blow them up, put them from the farm so
9 you can say these are the areas that I'm farming
10 this year. Because you do a rotation crop, you
11 know, farm one area one time and then you rest it
12 and do another. And then also for -- to put your
13 blinds and the hunting and stuff like that. So --

14 Q. I've got one of those in my camp, but
15 it's much smaller.

16 A. Yeah. So that's what I was looking for
17 there.

18 Q. Okay. If this panel determines that
19 remediation needs to occur on the property --
20 whatever that looks like, whether it's what
21 Chevron has proposed, whether it's what ICON has
22 proposed, whether it's something that they, in
23 their scientific wisdom, come up with on their
24 own, are you going to make sure that happens on
25 this property?

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1 A. Yes.

2 Q. That's what you want today; right?

3 A. I want it cleaned up.

4 MR. KEATING: Pass the witness.

5 CROSS-EXAMINATION

6 BY MR. GROSSMAN:

7 Q. Hey, Mr. Henning. It's good to see you
8 again.

9 A. Good to see you too.

10 Q. Lou Grossman for Chevron. You want the
11 property cleaned up?

12 A. Correct.

13 Q. That's what Mr. Keating said?

14 A. Yes.

15 Q. In truth, you want it cleaned up to a
16 condition that is better than it was when you
17 purchased it; isn't that right?

18 A. Better than it was -- well, my
19 understanding, that it's polluted now. So, yes,
20 better than it was.

21 Q. Better than it was at the time of
22 purchase.

23 And he talked to you about the Phase 1,
24 but he didn't show the panel the Phase 1.

25 A. Okay.

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1 MR. GROSSMAN: Jonah, could you pull up
2 Exhibit 19, please?

3 BY MR. GROSSMAN:

4 Q. Mr. Henning, you own 18,000 acres of
5 land in Louisiana?

6 A. Yes.

7 Q. When I deposed you in April, you had
8 just acquired land at East White Lake?

9 A. Yes.

10 Q. That's also a piece of property that's
11 in litigation, isn't it?

12 A. Not with me.

13 Q. No. But it is in litigation. You're
14 aware of that, correct?

15 A. Yeah. In fact, they -- I specifically
16 was excluded from whatever piece of property
17 that's included to some -- the legacy lawsuit. So
18 I bought all the land that is not included in any
19 legacy lawsuit.

20 Q. Okay. Mr. Henning, as somebody who's
21 got the reputation of buying property, who's
22 bought, you said, 8 to 10 acres -- or tracts of
23 land, 18,000 acres of land, you don't do a Phase 1
24 on every one; correct?

25 A. No.

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1 Q. You do it on some?

2 A. I did it on two.

3 Q. And you did it on this one particularly?

4 A. Yes.

5 Q. Let's go ahead -- and before we turn to
6 the conclusions that you did read, Mr. Keating
7 asked you if there was anything in this that
8 referenced a sunken well.

9 A. Right.

10 MR. GROSSMAN: I want to look at the bottom
11 of the page, Jonah.

12 BY MR. GROSSMAN:

13 Q. You see the second bullet point where it
14 says: "Mr. Paul Roussel was interviewed as part
15 of the ESE"?

16 A. Uh-huh. Yes, sir.

17 Q. And he acknowledges that there are two
18 ponds on the tract. One was a borrow pit created
19 during the construction of Highway 14, and the
20 second pond was created by oil and gas operations.

21 A. Okay.

22 Q. The only pond on that property caused by
23 oil and gas operations is where that blowout
24 occurred; isn't that right?

25 A. I now know that now, yes.

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1 Q. And you have no evidence that there is a
2 well that sunk to the bottom of that?

3 A. Oh, no. I don't have any -- I mean, I
4 got that information from the store.

5 Q. And you've since learned that there is
6 no well that sunk to the bottom of that?

7 A. I haven't learned that yet either.

8 Q. You haven't learned that -- have you not
9 been listening to the testimony in this case?

10 A. Not the whole --

11 Q. Okay.

12 A. I mean, I only -- I came in two days
13 ago, but I just started listening yesterday and
14 today.

15 Q. So we've all been here since Monday, and
16 you just started listening the other day?

17 A. No.

18 Q. Well, earlier some of Chevron's experts
19 got on. They testified that that pond is only
20 15 feet deep.

21 A. Well -- okay.

22 Q. Can't be a well at the bottom of that,
23 huh?

24 A. No, I wouldn't think. But, you know, I
25 was also told that you put a string down there,

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1 and you ran out of ball, it was so deep. So, I
2 mean, I only know what I got from the store at
3 Hayes.

4 Q. You've got no reason to disagree with
5 Chevron's experts that it's 15 feet deep?

6 A. No. If you're telling me that's a fact
7 and -- I have nothing to dispute you with.

8 Q. Well, let's look at -- I think you and I
9 talked about this in your deposition. You said
10 you would have switched -- or turned right to the
11 conclusions page in this Phase 1.

12 A. Yes, I probably would have.

13 MR. GROSSMAN: Let's pull that up. Sorry.

14 Page 3.

15 BY MR. GROSSMAN:

16 Q. All right. And I'm going to read this.
17 It says: "The history of oil and gas exploration
18 and production activities on the investigated
19 property constitutes an environmental issue. This
20 is due to the presence of pits associated with
21 those activities. Active oil and gas operations
22 can still be seen on the tract. These operations
23 include a tank battery, seven tanks, three
24 wellheads, and pipelines. Several of the tanks
25 were in disrepair with visible leaks on the tank

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1 connections and the piping. Potential
2 contamination resulting from the discharges or
3 releases from oil and gas exploration and
4 production activities may include naturally
5 occurring radioactive materials, hydrocarbons,
6 heavy metals, and chlorides."

7 Then it says: "Confirmation of the
8 actual presence can only be determined" -- we have
9 to go to the next page -- "by additional
10 investigation. This investigation would include
11 the collection and analyses of soil samples."

12 A. Correct.

13 Q. So in November of 2017, several months
14 before you purchased this property --

15 A. Correct.

16 Q. -- you were aware that there were oil
17 and gas exploration and production activities on
18 your property in the past; correct?

19 A. Correct.

20 Q. And in the present; correct?

21 A. Correct.

22 Q. You were aware that there were at least
23 four storage tanks that were leaking on the
24 property; correct?

25 A. Yes. It says it right there.

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1 Q. You were aware that there was an
2 aboveground fuel tank that was also leaking and
3 causing soil staining; correct?

4 A. Correct.

5 Q. You were aware that pits had been used
6 in the oil and gas exploration production
7 activities on the property too; correct?

8 A. I don't know what pits are, but it says
9 it right there, yes.

10 Q. You were aware of that in November of
11 2017; right?

12 A. Correct.

13 Q. Okay. And you were aware that the
14 person that you hired as an environmental expert
15 was calling this an environmental issue?

16 A. Correct.

17 Q. And that person said collection and
18 analysis of soil samples is recommended; right?

19 A. Did he say recommend? Or it just says
20 the only way you're going to find it is by doing
21 it.

22 Q. The only way you're going to find it is
23 by doing it?

24 A. Yeah. If he said "recommend," it would
25 have been something different. That's what I'm

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1 saying. As I told you, what I'm looking for in
2 Phase A says "this is contaminated. Don't do it."

3 Q. And you said there's an environmental
4 issue; right?

5 A. Yeah. There's an issue, yeah.

6 Q. And it says that you can confirm what
7 that issue is if you do soil samples; right?

8 A. Correct.

9 Q. You didn't do the soil samples?

10 A. No, I did not.

11 Q. What you did was you gave this report to
12 your lawyers?

13 A. Eventually, yes.

14 Q. Yeah. And at the time, November of
15 2017 -- that's a significant time isn't it?

16 MR. KEATING: Your Honor, I'm going to
17 object. We need to approach and have a
18 discussion outside the presence of the panel.

19 MR. GROSSMAN: I'm not going where you think
20 I'm going.

21 MR. KEATING: Yeah, you are.

22 MR. GROSSMAN: No, I'm not.

23 JUDGE PERRAULT: All right. Well, would the
24 panel go to their room?

25 And come to the mic.

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1 (Panel exits.)

2 JUDGE PERRAULT: All right. We're back on
3 the record.

4 MR. KEATING: Your Honor, this issue was
5 addressed already by objection for
6 Mr. Carmouche. He is putting his toe across
7 the line and talking about something that
8 you've already ruled --

9 MR. GROSSMAN: That is not true.

10 MR. KEATING: It is absolutely true.

11 JUDGE PERRAULT: I don't know what you're
12 talking about.

13 MR. KEATING: Mr. Henning had a prior lawsuit
14 on another property and --

15 JUDGE PERRAULT: Oh, that was the name on the
16 property?

17 MR. KEATING: Yes.

18 JUDGE PERRAULT: Are you going to talk about
19 the name on the --

20 MR. GROSSMAN: I'm not going to talk about
21 the remediation on the other property. I'm
22 not going to talk about the site closure.
23 I'm not going to talk about the no further
24 action letter.

25 JUDGE PERRAULT: All right. Where are you

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1 going to go?

2 MR. GROSSMAN: I'm only talking about the
3 fact, at the time that he got this letter, he
4 had another lawsuit pending against Chevron.

5 MR. KEATING: No, no, no.

6 JUDGE PERRAULT: Wait, wait, wait.

7 MR. KEATING: That's not relevant, Judge.

8 MR. GROSSMAN: That's absolutely --

9 MR. KEATING: This is not a prescription
10 trial.

11 JUDGE PERRAULT: What do you want to talk
12 about, now?

13 MR. GROSSMAN: I think it's relevant for this
14 panel to know that, at the time this person
15 purchased the property, they had another
16 legacy lawsuit against Chevron, that they
17 settled that lawsuit two days before they
18 brought this one.

19 JUDGE PERRAULT: And how is that relevant to
20 cleaning up this site?

21 MR. GROSSMAN: It's relevant in terms of what
22 was his intention of buying this property.

23 JUDGE PERRAULT: We're not here for that.
24 We're just here to determine whether the
25 property should be cleaned or not and what is

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1 the --

2 MR. GREGOIRE: It goes to proper use, Your
3 Honor. It goes to use of the property.
4 Reasonable anticipated use of the property.

5 MR. KEATING: It does not go to the use of
6 the property.

7 JUDGE PERRAULT: No. I'm going to agree with
8 the Henning group. It has nothing to do with
9 what we're here for. What I'm supposed to be
10 doing for the federal court is to determine
11 what plan to clean up the property, not what
12 happened before all that happened. We're
13 just here to determine how the -- whether
14 this -- what plan should be chosen to clean
15 up this property. That's all we're here for.
16 So all this other stuff is another issue that
17 is outside of what we're here for. All
18 right. That's on the record. So --

19 MR. GROSSMAN: Yep. My objection is noted,
20 Your Honor.

21 JUDGE PERRAULT: Yes. Your objection is
22 noted, and we're just here to determine what
23 the plan for the remediation should be, and
24 we're going to stick with that.

25 And I'm going to go off the record while

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1 I go get the panel back.

2 (Recess taken at 4:41 p.m. Back on record
3 at 4:43 p.m.)

4 JUDGE PERRAULT: We're back on the record.
5 Today's date is February 10th, 2023. It's
6 now 4:43, and we are back on the record.

7 Counsel, please proceed with your cross.

8 MR. GROSSMAN: Thank you, Your Honor.

9 BY MR. GROSSMAN:

10 Q. Mr. Henning, I think Mr. Keating already
11 established that after you got this from Jared
12 King, you didn't have any other discussion with
13 Jared King; correct?

14 A. I don't think so.

15 Q. You didn't tell him, hey, I'm worried
16 that some of these issues that you pointed out
17 here are going to restrict my ability to use the
18 property in the future. You didn't have that
19 conversation with him?

20 A. No.

21 Q. And I think you already said that you
22 didn't look at any of the photographs that were
23 referenced in this letter?

24 A. No.

25 MR. GROSSMAN: And, Jonah, can you go up

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1 there and pull up the photographs?

2 BY MR. GROSSMAN:

3 Q. Do you remember this picture that I
4 showed you in your deposition?

5 A. Yes.

6 Q. That's a series of storage tanks, isn't
7 it?

8 A. Yes.

9 Q. They don't look very good, do they?

10 A. No. I don't think so.

11 Q. Any idea who put those there?

12 A. No.

13 Q. Mr. Arabie's group took these -- took
14 this picture, best of your knowledge?

15 A. Best of my knowledge, that's what -- you
16 told me they came from their office -- their
17 subpoena.

18 Q. And before you bought this property, you
19 didn't see this condition?

20 A. I didn't see these.

21 Q. You didn't go out on the property and
22 look around?

23 A. Yes, I did.

24 Q. You didn't go on the west side and see
25 the tank battery right there?

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1 A. We didn't go too far on the west. He
2 didn't take me too far on the west side.

3 Q. How far did you go on the west side?

4 A. Not very -- right until -- probably
5 where this -- there's a water -- there's an old
6 water well.

7 Q. Okay.

8 A. And probably right there.

9 Q. You didn't go where the parking pad is
10 now?

11 A. No.

12 Q. That's where all this stuff was.

13 MR. GROSSMAN: Go ahead and switch to the
14 next picture.

15 BY MR. GROSSMAN:

16 Q. Here's another picture of the tank
17 battery. You didn't see this before?

18 A. No, sir.

19 Q. You have no knowledge whether this
20 condition -- this condition doesn't exist on your
21 property now; right?

22 A. To be honest with you, I do not know.

23 Q. You don't know?

24 A. No, sir.

25 MR. GROSSMAN: Go ahead and switch to the

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1 next one.

2 BY MR. GROSSMAN:

3 Q. Now, this existed at the time that you
4 bought the property; right? These conditions?
5 Everything that I'm showing you existed at the
6 time that you bought the property; right?

7 A. As far as I've been told, yes.

8 Q. But you never saw it?

9 A. Correct.

10 Q. Because you never went out and looked?

11 A. Correct.

12 MR. GROSSMAN: Turn to the next picture,
13 please.

14 A. Well, I went and looked. I didn't see
15 this.

16 BY MR. GROSSMAN:

17 Q. Okay. You didn't see this?

18 A. No, sir.

19 Q. Do you have any idea what this is?

20 A. No, sir.

21 Q. Do you know if this is oil and
22 gas-related?

23 A. No.

24 MR. GROSSMAN: Let's look at the next
25 picture.

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1 BY MR. GROSSMAN:

2 Q. All right. Do you see that name "United
3 World Energy Corporation"?

4 A. Yes.

5 Q. Did you ever hear of that company?

6 A. No.

7 Q. So it's fair to say you've never had any
8 conversations with anybody at United World Energy
9 Company?

10 A. If they were, I didn't know they were.

11 Q. Do you know if you sued them in this
12 case or not?

13 A. I do not know.

14 Q. So you never discussed with anybody at
15 UWEC your concerns about environmental conditions
16 on this property; fair enough?

17 A. Correct.

18 Q. I could show you more of the pictures,
19 but they're all the same.

20 MR. GROSSMAN: Oh, let's go to 276, Jonah.

21 BY MR. GROSSMAN:

22 Q. Old abandoned truck?

23 A. Yes, sir.

24 Q. Do you know if that's still out there?

25 A. I do not know. That looks like it's

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1 next to the bayou.

2 Q. You haven't gone out to look, huh?

3 A. No, sir.

4 Q. Okay. Now, before you purchased this
5 property -- I know one of the other items of due
6 diligence you did was to go out and test the water
7 well on the property. Do you remember that?

8 A. Yes.

9 Q. That was a deep water well?

10 A. Yes.

11 Q. And do you remember getting the report
12 from Maxim's?

13 A. Yes.

14 Q. Do you remember what the gallons per
15 minute was that they found?

16 A. No, I do not.

17 MR. GROSSMAN: Jonah, could you pull up
18 Chevron 127?

19 BY MR. GROSSMAN:

20 Q. See about halfway down there where it
21 says: "Note: Well pumps 3500 gallons per minute
22 at 1800 rpm"?

23 A. Yes.

24 Q. Well is good. No sand?

25 A. Correct.

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1 Q. So you had a functioning deep water well
2 on the west side of your property; correct?

3 A. As -- from that report, yes.

4 Q. All right. But you saw this report
5 before you bought the property; right?

6 A. Yes. But there was some -- the farmer
7 said that it -- after it rained for a couple days,
8 it gets salty.

9 Q. It gets "soft"?

10 A. Salty.

11 Q. Salty. Okay.

12 A. I don't know.

13 Q. What farmer said that?

14 A. Shultz, the farmer that was before.

15 Q. All right. But you wanted this well
16 tested before you bought the property?

17 A. Yeah. Yeah. I mean, as far as what
18 they're saying, it works.

19 Q. And you wanted it tested specifically
20 for agricultural purposes; right?

21 A. Correct.

22 Q. I believe you already told the panel
23 that part of the reason that you bought this
24 property was as a legacy for your son's hunting
25 and fishing guide service; is that correct?

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1 A. Correct.

2 Q. And I think the intention, when you
3 bought this property, was that you were going to
4 farm it and you were going to hunt it?

5 A. Yes, sir.

6 Q. So we could agree that when you bought
7 this property, you weren't thinking about putting
8 a solar farm; correct?

9 A. No. Not at the time I bought it, no.

10 Q. You weren't thinking about turning this
11 into a residential subdivision, were you?

12 A. No. Not --

13 Q. You're not planning to do that right
14 now, are you?

15 MR. KEATING: Let him finish, Lou.

16 A. I'm not planning to do that right now
17 either.

18 MR. GROSSMAN: I'm sorry, Your Honor.

19 BY MR. GROSSMAN:

20 Q. I apologize, Mr. Henning. It's been a
21 long week.

22 A. Yes.

23 Q. And I'm trying to get through this.

24 Do you remember what you told me about
25 the possibility of a residential subdivision out

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1 there?

2 A. I'm sorry. What's that?

3 Q. Do you remember what you told me
4 about --

5 A. Yeah. I pretty much said that didn't
6 look like it would probably be a good -- I mean,
7 it wouldn't be feasible or whatever. But I think
8 subsequently I've kind of looked at the -- the
9 place that -- sugarcane something. I don't know
10 what it's called. And I went: Huh, that's
11 interesting that it's out there in the middle of
12 nowhere.

13 So I'm just saying that 20 years,
14 30 years from now I don't know what's going to
15 happen. But you're right. Today I'm not thinking
16 about putting a residential subdivision in.

17 Q. That's right. And the place that you're
18 talking about, you said it was about 7 miles away
19 from Lake Charles?

20 A. Probably.

21 Q. And how far away is your farm?

22 A. Probably about 14, 15, 20 -- it probably
23 takes 20 minutes, 20 miles.

24 Q. 20 miles. Let me ask you this question:
25 Has anybody told you that it's not safe to put a

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1 residential subdivision out there?

2 A. I haven't asked, but nobody has told me.

3 Q. None of your experts have told you that,
4 right?

5 A. They haven't told me.

6 Q. Same question with a bass pond. Has
7 anybody told you not to put a bass pond out there?

8 A. No. Nobody has told me yet, but I'm
9 sure if I actually start moving forward, I'm sure
10 I'm going to get stopped by the government.

11 Q. You know, I heard Mr. Keating ask this
12 question. Is it reasonable for Chevron to impose
13 restrictions on the way you're going to use your
14 property in the future?

15 A. (Nods head.)

16 Q. Has anybody from Chevron told you that
17 you can't use your property for whatever you want
18 in the future?

19 A. Nobody from Chevron has told me that.

20 Q. I know you didn't hear the testimony of
21 Chevron's experts, but have your lawyers or your
22 experts told you that Chevron's experts say you
23 can't do certain things on your property?

24 A. No. Because I hadn't asked them either.

25 Q. Okay. You have no reason to believe

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1 that Chevron is suggesting that you are restricted
2 in your use of the property. Fair?

3 A. I don't believe Chevron is telling me
4 that. I think it's the presence of the chemicals
5 or whatever is down there is what worries me.

6 Q. It worries you, but has anybody told you
7 that those constituents are going to impact your
8 ability to use the property in the future?

9 A. No. Again, I haven't asked.

10 Q. And your experts haven't told you that?

11 A. No, they haven't told me.

12 Q. Right. Chevron's experts haven't told
13 you that?

14 A. Haven't told me.

15 Q. You haven't heard from any of the
16 lawyers in this case through argument or otherwise
17 that those constituents are going to limit you in
18 your use of the property?

19 A. Well, I don't -- some -- I think
20 something was going on up here about the depth of
21 roots or something, and I don't know what that all
22 means. But that's all I can say.

23 Q. And you mentioned that the west side of
24 the property had been in sugarcane at some point?

25 A. Yes, sir.

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1 Q. Not at any point since you've owned it;
2 right?

3 A. No. Before I owned it.

4 Q. That was years ago?

5 A. I don't know how long ago.

6 Q. You can't tell us how --

7 A. I cannot tell you.

8 Q. Fair to say you never saw it in
9 sugarcane?

10 A. I never saw it in sugarcane.

11 Q. I think we talked about the fact that
12 you've got a cell phone tower out there?

13 A. Yes, sir.

14 Q. Cattle?

15 A. Yes, sir.

16 Q. Farming?

17 A. Yes, sir.

18 Q. And that farming operation is your son
19 and daughter?

20 A. Yes.

21 Q. They don't do crawfish?

22 A. No. Not right -- no. I mean, not
23 there, no.

24 Q. Not there. I asked you this in your
25 deposition. I said: Do you have any crawfish out

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1 there? You told me: No, we don't do that.

2 A. Right.

3 Q. Is that right?

4 A. That's correct.

5 Q. And you're not expecting to lease this
6 property to somebody other than your family, are
7 you?

8 A. You never -- no. I can't say that. I
9 mean, the way that the USDA programs work and all
10 that kind of stuff -- you've got to be flexible
11 about who's farming it, but as the format goes
12 right now, no.

13 Q. Okay.

14 A. But a new one is coming.

15 Q. Well, you bought these properties -- you
16 buy all these properties as a legacy not just to
17 your son and his fishing operations but to both
18 your children?

19 A. Yes. And my daughter is interested too.
20 She wants to know -- because I tried to talk to
21 her about, well, maybe my son gets the land. And
22 she goes: Why does he get the land? And you and
23 Poppa -- which is her grandfather -- said, you
24 know, land and he always tries to buy land. And
25 she says why I am getting cut out?

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1 And I said: Oh, okay. Now I've got to
2 go back and figure out how to deal with my
3 children and how it's going to be separated so --
4 but, no, she wants a part of it too.

5 Q. You mentioned the bass pond, and we
6 talked about it a little bit in your deposition.
7 And I think you said it again today. It's going
8 to be a pretty costly endeavor; right?

9 A. Yes.

10 Q. Did it cost about a million bucks?

11 A. That's the preliminary number that we're
12 getting for it.

13 Q. Where did that number come from?

14 A. I talked to a guy -- some guy named
15 Palamino. He's a dirt work guy. He's done a fish
16 pond. This was -- oh, it had to be more than a
17 year ago now.

18 Q. Okay. When I took your deposition, you
19 didn't mention anything about that conversation
20 with Palomino?

21 A. No. Because I didn't really remember it
22 until I talked to my son.

23 Q. Okay.

24 A. I mean, it was nothing but a sit-down at
25 lunch, and he'd say, hey, what do you think? This

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1 is what we're going to do. He went and looked at
2 it. He came back. I don't have any papers or any
3 estimates, no offers or whatever.

4 MR. GROSSMAN: Jonah, could you pull up
5 Exhibit 76, please? 7, page 6. Sorry.

6 BY MR. GROSSMAN:

7 Q. This is your property, Mr. Henning?

8 A. Yes. Can I look here?

9 Q. Yeah. You can look up there.

10 A. Because I don't see too good. I guess I
11 need to see where you're pointing at.

12 Q. Well, we'll blow it up for you. This is
13 Highway 14 that comes down right there?

14 A. Yes.

15 Q. Now, in your deposition I asked you
16 where this pond would be. Do you remember what
17 you told me?

18 A. I can tell you what I was thinking, that
19 it would be this area here (indicating).

20 Q. You told me the whole western side?

21 A. Okay. Probably not in -- maybe -- I
22 don't know. Yeah. Okay.

23 Q. So at least this big (indicating)?

24 A. At least it would be -- I know this
25 (indicating). The question is do you go and --

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1 because you've got this little cutout right here
2 (indicating). So you go in here (indicating).
3 I'm not sure how the bass boats would go in there,
4 but, I mean -- but -- yeah. You know, you'd
5 have -- I mean, I know that's something. So I'd
6 have to go around that and -- but I don't have
7 maps of all this. So I don't know what I'm going
8 to do to --

9 Q. Do you know what this is (indicating)?

10 A. No. I mean, it's something about --
11 it's probably that thing you showed me, the --
12 whatever those things are, the tanks.

13 Q. Well, those are gone.

14 A. Oh, they're gone? Okay.

15 Q. That's the parking pad. You didn't know
16 that?

17 A. No.

18 Q. You don't have any depth parameters for
19 this pond, do you?

20 A. No. We didn't go there.

21 Q. Do you know how deep a fishing pond is
22 supposed to be?

23 A. Not really.

24 Q. Okay. And, again, you've not heard
25 anybody tell you, you can't do a fishing pond out

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1 there; right?

2 A. I haven't asked anybody. I hadn't gone
3 probably to the permit stage yet.

4 Q. Mr. Henning, do you have any warning
5 signs on your property telling people not to come
6 on because there's dangerous chemicals out there?

7 A. No, I do not.

8 Q. No one has told you to put those out
9 there either, have they?

10 A. No, they haven't.

11 Q. Do you still allow hunters to come out
12 on your property?

13 A. Yeah. We don't go on this side, though
14 (indicating). It's -- the hunting is all done
15 here (indicating). Well, we don't own that, but
16 we lease that. So the hunting is probably all
17 here (indicating).

18 Q. All in the --

19 A. And up here now (indicating).

20 Q. Only in the area that gets flooded for
21 rice?

22 A. Uh-huh. Yeah. This is all just kind of
23 fallow and grass, and there's no levees to hold
24 water for the ducks or anything. So don't hunt
25 over here (indicating). We hunt over there

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1 (indicating).

2 Q. Right. And you made a significant
3 financial investment in this western side of the
4 property --

5 A. Yes, I did.

6 Q. -- to keep it in rice production; right?

7 A. Correct.

8 Q. You're not telling hunters not to come
9 out on your property, are you?

10 A. No, sir. I'm taking them out there.

11 Q. And you've not told your son and
12 daughter that they shouldn't farm certain areas
13 because it's dangerous to do so?

14 A. Not in the areas that we're farming. I
15 don't know of any. I mean, I know of no danger of
16 the areas that we're farming.

17 Q. Okay. Do you know of any dangers
18 anywhere on your property?

19 A. I don't know. I guess I'm suspecting
20 because everybody is fighting about it. So I'm
21 suspecting these areas are dangerous.

22 Q. So let me ask you this question then:
23 Are you aware that the -- okay. Let me back up.

24 When we talked in April, you had never
25 heard of Mr. Miller?

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1 A. Correct.

2 Q. And do you know Mr. Miller now?

3 A. I still don't know who Mr. Miller is.

4 Q. What about Mr. Prejean?

5 A. No, sir.

6 Q. What about Richard Schuhmann?

7 A. No, sir.

8 Q. Never had any conversations with any of
9 them?

10 A. If I did, I didn't know who they were.

11 Q. Okay. You never sat down with any of
12 them and said, "Hey, here are all the things I
13 want to do with my property. Is that okay?"

14 A. No, I have not. I don't think I've ever
15 done that with anybody unless they were
16 overhearing me with a conversation with my
17 lawyers.

18 Q. So you're not aware that your -- the
19 experts that your lawyers hired are not proposing
20 a remediation to address human health risks.
21 You're not aware of that?

22 A. No, sir. I mean, I really don't know
23 what they're proposing other than -- my
24 understanding is that we're here to clean up the
25 property. I don't know about risk and all that.

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1 Q. Okay. You're aware that we're here in
2 front of the Louisiana Department of Natural
3 Resources, Judge Perrault, and lots of experts,
4 the lawyers to talk about two competing plans that
5 are called the most feasible plan?

6 A. Correct. And I understand that there's
7 two plans to clean up the property.

8 Q. And you understand that Chevron
9 submitted a plan?

10 A. Yes, sir.

11 Q. You understand that you have submitted a
12 plan through your experts?

13 A. Through my experts, yes. I haven't done
14 it. I promise you.

15 Q. And you've never looked at any of the
16 plans?

17 A. No.

18 Q. So you have no idea what anybody is
19 proposing?

20 A. I have no idea.

21 Q. And I think Mr. Keating may have asked
22 this, but with -- whatever this panel concludes to
23 be the most reasonable plan to protect human
24 health, plants, animals, and the environment,
25 you're going to agree with that; right?

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1 A. Correct.

2 MR. GROSSMAN: Thank you. No further
3 questions.

4 JUDGE PERRAULT: Any redirect?

5 MR. KEATING: Brief, Your Honor. Everybody
6 is ready to go.

7 REDIRECT EXAMINATION

8 BY MR. KEATING:

9 Q. I'm going to try to clear up in a moment
10 that this really doesn't matter, but since
11 Mr. Grossman brought this up and showed you some
12 of it, we might as well get it all out there.

13 You see here this is the Phase 1 for the
14 subject property. Do you remember talking about
15 that?

16 A. Correct.

17 Q. What does this say right here that I'm
18 pointing at if you can read it (indicating)?

19 A. "Mr. Henning is not aware of any
20 environmental liens, cleanups, or chemical spills
21 associated with the tract."

22 Q. So that's something you told Arabie?

23 A. Yes. It must -- yes.

24 Q. And he showed you here -- he read some
25 of this to you in the second bullet and showed you

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1 the second pond was created by oil and gas
2 operations?

3 A. Correct.

4 Q. Do you see anything about a sunken well?

5 A. No, sir.

6 Q. Do you see anything about a blowout?

7 A. No, sir.

8 Q. What does it say about the prior
9 landowner's knowledge? Can you read that?

10 A. "Mr. Roussell, who was the land manager
11 for the Walker property, said, according to his
12 knowledge, there have not been any underground
13 storage tanks or other environmental issues on the
14 investigated property."

15 Q. Mr. Grossman read through and showed you
16 the last paragraph of the Phase 1 that Arabie did
17 for you on the subject property. Do you remember
18 that?

19 A. Yes.

20 Q. And we talked earlier about the Phase 1
21 you had done for Choupique where there's no legacy
22 lawsuit, there's no issues, there's nobody
23 admitting they contaminated your property; right?

24 A. Right.

25 Q. Is that the exact same paragraph that he

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1 read to you?

2 A. Close.

3 Q. I mean, more or less?

4 A. More or less. There's definitely words
5 that are different, but it's more or less the
6 same.

7 Q. It tells you, you have potential
8 contamination on the Choupique property?

9 A. Correct.

10 Q. Does it tell you that it could be from
11 NORM, hydrocarbons, heavy metals, and chlorides?

12 A. Correct.

13 Q. Does it tell us that the presence of --
14 the actual presence of contaminants and the extent
15 of impacts can only be determined through the
16 additional investigation beyond the scope of their
17 evaluation?

18 A. Correct.

19 Q. Is that the same thing they told you
20 more or less in -- for the subject property?

21 A. Pretty much.

22 Q. Mr. Grossman showed you a bunch of
23 pictures and said: You've never looked at these
24 before, you've never looked at these before.

25 Were those photos sent to you before he

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1 took your deposition?

2 A. No, sir.

3 Q. Have you ever had a chance to see them
4 before then?

5 A. I've never looked at them.

6 Q. They were never provided to you?

7 A. No.

8 Q. You did -- or did you go visit this site
9 with the prior landowner before you bought the
10 property?

11 A. Yes.

12 Q. Was there an issue out there that kept
13 you from being able to get around everywhere?

14 A. Yeah. It was flooded. I mean, that --
15 I mean, when we went out there, we had to stop on
16 a truck. He had to unload a four-wheeler. We
17 went through the property, driving around, trying
18 to -- we eventually got stuck and had to walk out.
19 I kind of pretty much told him, I said -- I mean,
20 that probably focused my idea of the protection
21 levee because I said, you know, this is not very
22 good for an initial viewing of the property, to
23 stick me out here in the middle of nowhere and
24 make me walk out, you know, in the water. Lucky I
25 had boots on.

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1 Q. So did the conditions prevent you from
2 getting around on the whole property?

3 A. Yeah, pretty much.

4 Q. Another thing about the pictures --
5 Mr. Henning, did you put the pollution on your
6 property?

7 A. No, I did not.

8 Q. Is it your understanding that Chevron
9 has admitted that they contaminated your property?

10 A. That's what my lawyers have told me.

11 Q. Is it your understanding that that's why
12 we're here?

13 A. Yes.

14 Q. Is it your understanding that the judge
15 has ruled that Chevron has admitted your property
16 can't be used for its intended purposes?

17 A. Correct.

18 Q. Mr. Grossman asked you about warning
19 signs: Did you put up any warning signs to warn
20 people there might be a danger on your property?

21 Do you remember that?

22 A. Yes, sir.

23 Q. Has Chevron put any warnings signs up on
24 your property to warn anybody after they admitted
25 they contaminated your property?

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1 A. No, they haven't.

2 MR. KEATING: No further questions.

3 JUDGE PERRAULT: Did the panel have any
4 questions?

5 PANELIST OLIVIER: This is Stephen Olivier.
6 We did have some questions on clarification
7 of current and future intended use of the
8 property, but for me, based on listening to
9 testimony and questioning, I think it's
10 pretty clear for me that you answered all of
11 my questions, at least for your current and
12 future intended use of the property. So,
13 therefore, I don't have any further
14 questions.

15 PANELIST DELMAR: I do have one question.
16 This is Chris Delmar. You mentioned the NRCS
17 and -- in completing a project. Was this on
18 the property or was this on, like, an
19 adjacent property?

20 THE WITNESS: No. If you get the map on
21 there again, I can show you. It's the
22 north -- what we call the northeast.

23 PANELIST DELMAR: Okay.

24 THE WITNESS: It's across the road. There's
25 a -- it's on my screen.

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1 JUDGE PERRAULT: It takes a while for that
2 one to warm up.

3 THE WITNESS: I've got to figure out where I
4 am. It's going to be this piece right here.

5 PANELIST DELMAR: In that area the NRCS is
6 sort of completing a project or --

7 THE WITNESS: Yeah. They -- along this canal
8 here, we're going to put some kind of project
9 of -- like I said, they're doing some kind of
10 filtration deal and everything, but then
11 here's the -- I get to hunt it. So -- and
12 it -- because it's going to be three ponds,
13 you know, a very short level. I can put
14 grass and stuff in it. So they're going to
15 work with me on that, and then we get to hunt
16 it. And then I think it's a three-year
17 project, and after that, then the levees and
18 the water control structures, we might...

19 PANELIST DELMAR: Okay. It's
20 concurrently -- the project is currently in
21 process. Like, it's under construction and
22 everything.

23 THE WITNESS: Yeah. I think -- I can't
24 remember if we signed the contract or if
25 he's -- we've had kind of the last meeting,

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1 we'll get you the contract with the NRCS
2 people to do. Because, you know, they put
3 restrictions about what we can -- you know,
4 we've got to do whatever they tell us to do
5 to the property.

6 PANELIST DELMAR: Yeah.

7 PANELIST OLIVIER: And so Stephen Olivier
8 again. So for clarification, it looks like
9 that project y'all discussed at NRCS, it
10 doesn't appear to be located on any of the
11 Chevron limited admission areas marked in
12 color, the Area 2, 4, 5, 6, or 8?

13 THE WITNESS: No, it does not.

14 PANELIST OLIVIER: Okay. Thank you. That's
15 all the questions I have.

16 JUDGE PERRAULT: Any other panel questions?

17 All right. Well, thank you very much.

18 THE WITNESS: Thank you.

19 MR. GROSSMAN: Your Honor.

20 JUDGE PERRAULT: Yes, sir.

21 MR. GROSSMAN: We just want to offer a file
22 and introduce Chevron Exhibits 19, 127,
23 and 7.

24 JUDGE PERRAULT: Exhibit 19. What's the next
25 one?

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1 MR. GROSSMAN: 127.

2 JUDGE PERRAULT: 127.

3 MR. GROSSMAN: It's a --

4 JUDGE PERRAULT: And what is 19? What's the
5 label of that?

6 MR. GROSSMAN: 19 is the Phase 1
7 environmental.

8 JUDGE PERRAULT: What is 127?

9 MR. GROSSMAN: That's the Maxim Well Services
10 report.

11 JUDGE PERRAULT: Say the first word.

12 MR. GROSSMAN: Maxim, M-A-X-I-M.

13 JUDGE PERRAULT: Maxim Well Services report.
14 And what is Exhibit 7?

15 MR. GROSSMAN: Exhibit 7 is Chevron's limited
16 admission.

17 JUDGE PERRAULT: Is there any objection to
18 Exhibit 19?

19 MR. KEATING: No, Your Honor.

20 JUDGE PERRAULT: No object. So ordered. It
21 shall be admitted.

22 Any objection to Exhibit 127?

23 MR. KEATING: No, Your Honor.

24 JUDGE PERRAULT: No objection. It shall be
25 admitted.

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1 Any objection to Exhibit 7?

2 MR. KEATING: No, Your Honor.

3 JUDGE PERRAULT: No objection and it is
4 admitted.

5 And does Henning have any exhibits?

6 MR. KEATING: Your Honor, I do have one I'd
7 like to offer, file, and introduce. YYYY,
8 four Ys.

9 JUDGE PERRAULT: Four Ys.

10 MR. KEATING: This is the Phase 1 for what we
11 were calling the Choupique property.

12 JUDGE PERRAULT: Phase 1 Choupique property?

13 MR. KEATING: Choupique.

14 JUDGE PERRAULT: Like S-U --

15 MR. KEATING: Sorry. It's C-H-O-U-P-I-Q-U-E.

16 JUDGE PERRAULT: O-U-P-I-Q-U-E property.

17 Any objection to Exhibit YYYY?

18 MR. GROSSMAN: No, Your Honor.

19 JUDGE PERRAULT: No objection. So ordered.
20 It shall be admitted.

21 Anything else?

22 MR. GROSSMAN: One matter of housekeeping, I
23 guess.

24 JUDGE PERRAULT: Okay.

25 MR. GROSSMAN: One the experts we intend to

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1 call in rebuttal has a trial starting Monday
2 in Montana --

3 JUDGE PERRAULT: Okay.

4 MR. GROSSMAN: -- and has asked to
5 participate via Zoom.

6 JUDGE PERRAULT: Any objection?

7 MR. GROSSMAN: It's Dr. Kind.

8 MR. KEATING: That's fine, Your Honor.

9 JUDGE PERRAULT: No objection. He shall be
10 admitted to participate by Zoom.

11 MR. GROSSMAN: We'll take care of the setup
12 on our end, I guess, to allow him to --

13 JUDGE PERRAULT: All right. If you have any
14 questions, talk to Jared because I have
15 absolutely no idea how any of this stuff
16 works.

17 MR. GROSSMAN: Okay. We'll get our people to
18 talk to your people and figure it out.

19 JUDGE PERRAULT: Okay. That's great.

20 Any other housekeeping?

21 MR. KEATING: Just a question on that. Will
22 you tell us who you're going to call on
23 Monday by sometime on Sunday?

24 MR. GROSSMAN: Yes.

25 MR. KEATING: And provide slides by whatever

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1 time --

2 MR. GROSSMAN: Monday morning. A.m. Monday
3 morning. Yeah. Absolutely.

4 JUDGE PERRAULT: Does this complete your
5 case?

6 MR. KEATING: Yes, Your Honor. Henning
7 rests.

8 JUDGE PERRAULT: Henning rests on their plan.

9 Now, earlier y'all had by agreement
10 and -- you know, if y'all want to change that
11 up, we can. It's up to y'all. Let's see.

12 Chevron presented its plan, and then
13 Henning presented its plan. And then Chevron
14 is going to do -- present its rebuttal. Then
15 Henning is going to present their rebuttal.
16 That's what we've got.

17 MR. CARMOUCHE: That's kind of, I guess, what
18 we need to talk about, Judge. Do we have
19 Monday and Tuesday or just --

20 JUDGE PERRAULT: We have Monday and Tuesday
21 scheduled.

22 MR. CARMOUCHE: Okay.

23 JUDGE PERRAULT: And then we have some
24 back-stop days. We've got two back-stop
25 days.

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1 MR. CARMOUCHE: I don't know how many
2 witnesses they're planning on calling on
3 rebuttal. I'm going to try not to. So I
4 just -- what I'd like to do if we're going to
5 do closing on Monday or no matter what or --

6 MR. GREGOIRE: We do, John. And your
7 cross-examination of rebuttal witnesses. We
8 plan to complete our rebuttal case on Monday.

9 MR. CARMOUCHE: Closing Monday.

10 MR. GREGOIRE: Yes.

11 MR. CARMOUCHE: If they finish and I don't
12 call anybody, we plan on closing on Tuesday,
13 so we'll finish.

14 MS. RENFROE: I thought you said Monday.

15 MR. CARMOUCHE: Monday. I'm sorry. Monday.

16 MS. RENFROE: If time permits we'd like to
17 close on Monday afternoon, but it's going to
18 be subject to --

19 JUDGE PERRAULT: And, listen, I'll go as late
20 as the panel will go so we can get it all
21 done Monday if that's y'all's wish.

22 And then we could meet Tuesday morning
23 to get all the evidence straight.

24 (Discussion off record.)

25 JUDGE PERRAULT: Do we have any other

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questions or concerns?
MR. KEATING: I don't believe so, Your Honor.
JUDGE PERRAULT: Well, does the panel have
any questions or concerns? All right.
Well, if there's nothing, we are in
recess until Monday morning at 9:00 a.m.
(Hearing adjourned at 5:12 p.m.)

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REPORTER'S PAGE

1
2 I, DIXIE VAUGHAN, Certified Court
3 Reporter in and for the State of Louisiana, (CCR
4 #28009), as defined in Rule 28 of the Federal
5 Rules of Civil Procedure and/or Article 1434(B) of
6 the Louisiana Code of Civil Procedure, do hereby
7 state on the Record:

8 That due to the interaction in the
9 spontaneous discourse of this proceeding, dashes
10 (--) have been used to indicate pauses, changes in
11 thought, and/or talkovers; that same is the proper
12 method for a Court Reporter's transcription of
13 proceeding, and that the dashes (--) do not
14 indicate that words or phrases have been left out
15 of this transcript;

16 That any spelling of words and/or names
17 which could not be verified through reference
18 material have been denoted with the phrase
19 "(phonetic)";

20 That (sic) denotes when a witness stated
21 word(s) that appears odd or erroneous to show that
22 the word is quoted exactly as it stands.

23
24 DIXIE VAUGHAN, CCR
25

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

R E P O R T E R ' S C E R T I F I C A T E

1
2 I, Dixie Vaughan, Certified Court
3 Reporter (Certificate #28009) in and for the State
4 of Louisiana, as the officer before whom this
5 testimony was taken, do hereby certify that on
6 Friday, February 10, 2023, in the above-entitled
7 and numbered cause, the PROCEEDINGS, after having
8 been duly sworn by me upon authority of R.S.
9 37:2554, did testify as hereinbefore set forth in
10 the foregoing 359 pages;

11
12 That this testimony was reported by me
13 in stenographic shorthand, was prepared and
14 transcribed by me or under my personal direction
15 and supervision, and is a true and correct
16 transcript to the best of my ability and
17 understanding;

18
19 That the transcript has been prepared in
20 compliance with transcript format guidelines
21 required by statute or by rules of the board;

22
23 That I have acted in compliance with the
24 prohibition on contractual relationships, as
25 defined by Louisiana Code of Civil Procedure

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

1 Article 1434 and in rules and advisory opinions of
2 the board;

3

4 That I am not of Counsel, nor related to
5 any person participating in this cause, and am in
6 no way interested in the outcome of this event.

7

8 SIGNED THIS THE 2ND DAY OF MARCH, 2023.

9

10

11

12

DIXIE VAUGHAN
Certified Court Reporter (LA)
Certified LiveNote Reporter

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